JVC

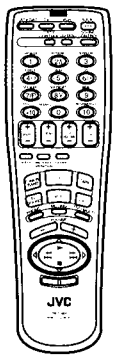
SERVICE MANUAL

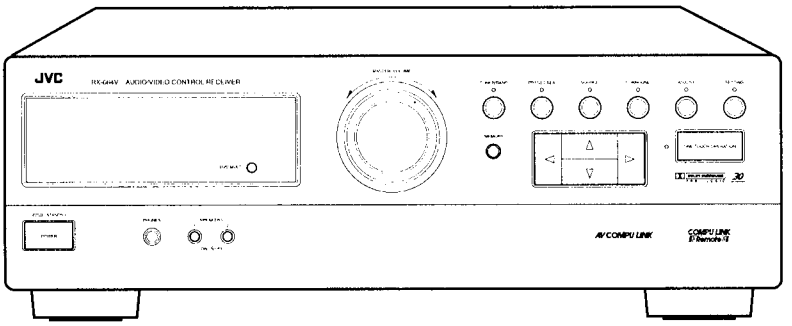
AUDIO VIDEO CONTROL RECEVER

RX-664VBK

Area Suffix

J ..... The U.S.A
C ..... Canada





COMPU LINK Remote

AV COMPU LINK

3D-PHONIC

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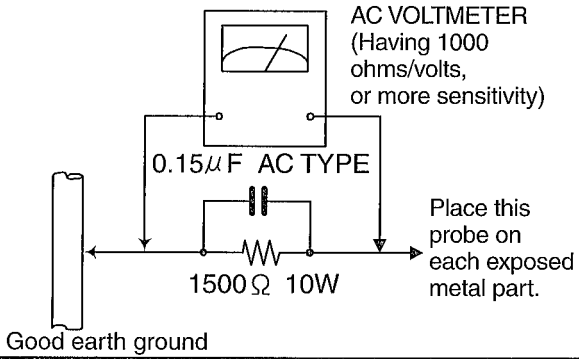
No.20661
Feb. 1998

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet , particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.)
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to eachexposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

JVC

VICTOR COMPANY OF JAPAN, LIMITED

EN

1297ORMMDWJEM

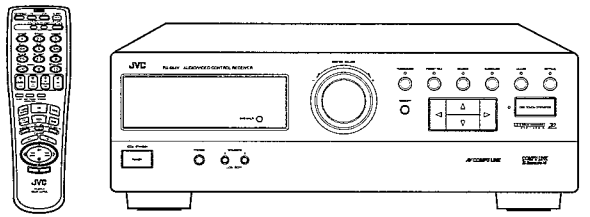
1-3

JVC

Instruction Book

AUDIO/VIDEO CONTROL RECEIVER

RX-664VBK



COMPU LINK Remote

AV COMPU LINK

3D-PHONIC

INSTRUCTIONS

For Customer Use:

Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

LET0119-001B
[J]

RX664VBK

Warnings, Cautions and Others

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

Caution — POWER switch!
Disconnect the mains plug to shut the power off completely. The POWER switch in any position does not disconnect the mains line. The power can be remote controlled.

Once you have found the best DVD MULTI playback, DAP, 3D-PHONIC and Surround mode settings for your listening room, note them in the table below for future reference (even though the receiver memorizes the settings until you change them).
For actual setting procedures, see pages 26 to 39.

DVD MULTI Playback Mode	
Center Speaker Level	
Left Rear Speaker Level	
Right Rear Speaker Level	

DAP Mode	Dance Club	Live Club	Hall	Pavilion	Headphones
Rear Speaker Level*					———
Effect Level					———

3D-PHONIC Mode	3D Action	3D Drama	3D Theater
Effect Level			

Surround Mode	Dolby Pro Logic	Dolby 3ch Logic	Theater Surround
Center Mode			
Delay Time		———	———
Center Speaker Level			
Rear Speaker Level*		———	
Effect Level	———	———	

* The left rear speaker level and right rear speaker level for DAP and the surround modes cannot be stored separately.

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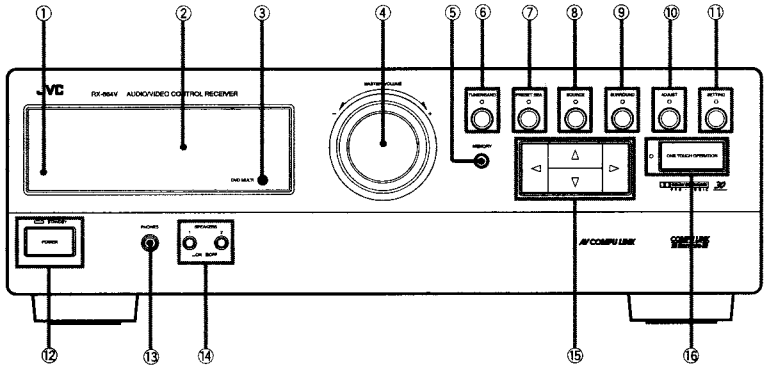
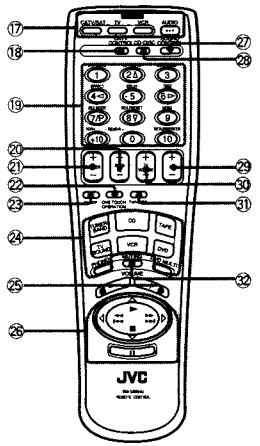
Parts Identification

Become familiar with the buttons and controls on the receiver before use.





Refer to the pages in parentheses for details.

Front Panel

① Remote sensor (13)
② Display (14)
③ DVD MULTI button (38)
④ MASTER VOLUME control (15)
⑤ MEMORY button (21)
⑥ TUNER/BAND button and lamp (21)
⑦ PRESET SEA button and lamp (24)
⑧ SOURCE button and lamp (14)
⑨ SURROUND button and lamp (27, 29)
⑩ ADJUST button and lamp (27, 29)
⑪ SETTING button and lamp (17)
⑫ POWER button and STANDBY lamp (14)
⑬ PHONES jack (16)
⑭ SPEAKERS 1/2 buttons (15)
⑮ Control △ / ▽ / ◁ / ▷ buttons
⑯ ONE TOUCH OPERATION button and lamp (20)

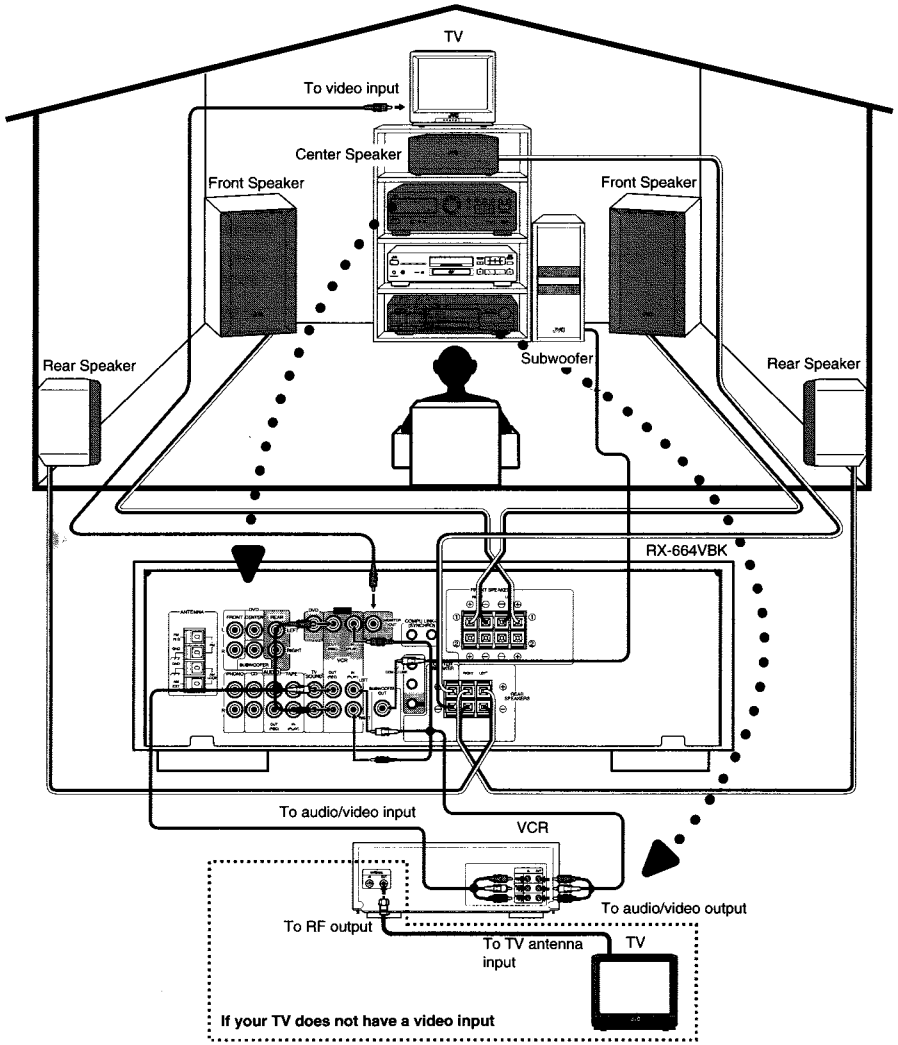
Remote Control

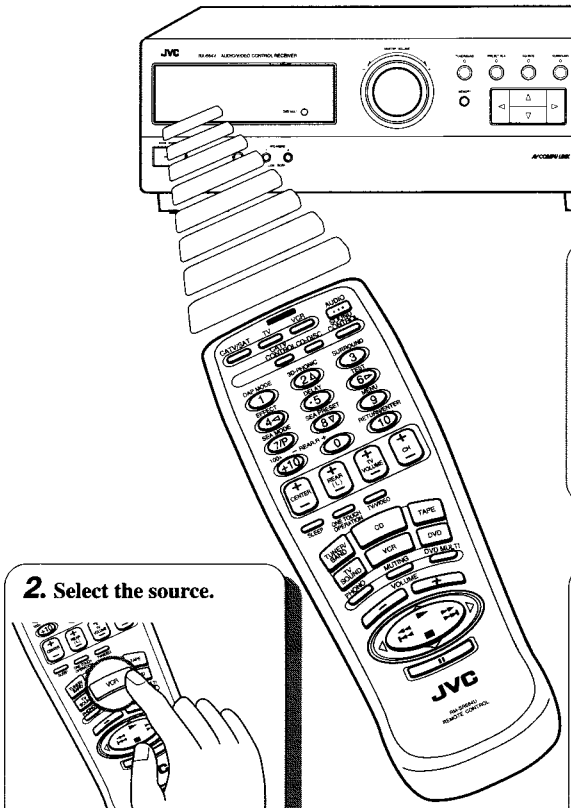
⑰ POWER buttons (CATV/SAT, TV, VCR, AUDIO) (14, 45, 46, 47)
⑱ CATV CONTROL button (46)
⑲ 10 keys/Sound control buttons (22, 25, 28, 30, 35, 36, 37, 39)
⑳ REAR (L) butttons (+/–) (36, 39)
㉑ CENTER buttons (+/–) (36, 39)
㉒ ONE TOUCH OPERATION button (20)
㉓ SLEEP button (18)
㉔ Source buttons (TUNER/BAND, CD, TAPE, TV SOUND, VCR, DVD, PHONO, DVD MULTI) (14, 39, 43, 44, 45, 47)
㉕ VOLUME buttons (+/–) (15)
㉖ Operating buttons for JVC audio/video components (43, 44, 47)
㉗ SOUND CONTROL button (25, 28, 30, 35, 37, 39)
㉘ CD-DISC button (43)
㉙ CH (Channel) buttons (+/–) (44, 45, 46, 47)
㉚ TV VOLUME button (44, 45)
㉛ TV/VIDEO button (44, 45)
㉜ MUTING button (15)

Easy Set Up & Operations

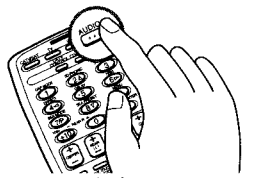
If you are already familiar with audio components, following four pages give you enough information to operate your RX-664VBK for enjoyment of surround sound in your listening room.

For Reproducing Surround Sound with your VCR

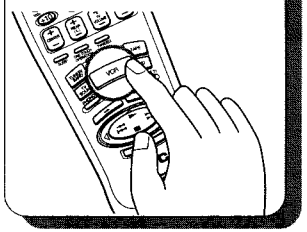




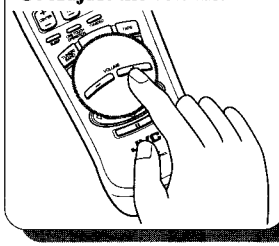
1. Turn on the power.



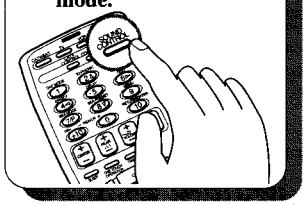
2. Select the source.



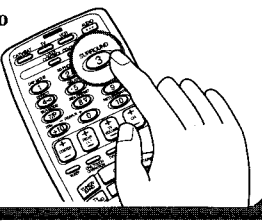
3. Adjust the volume.



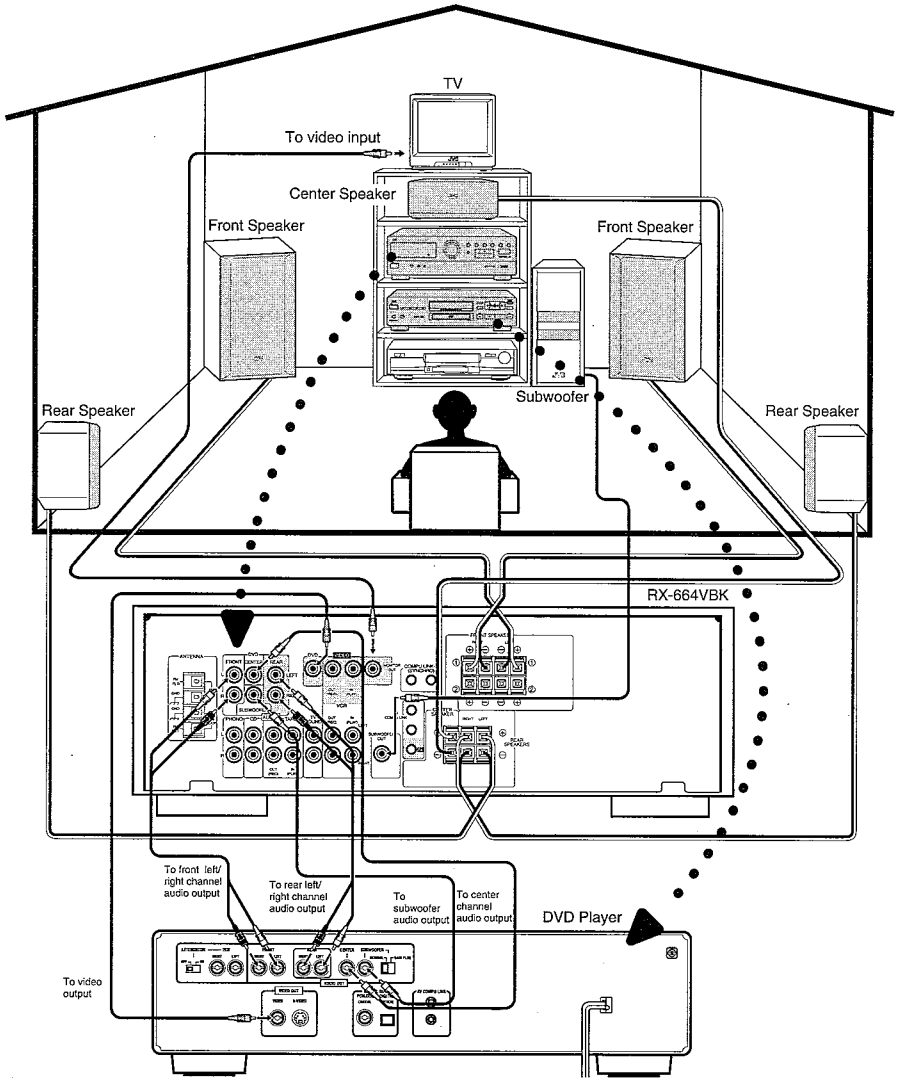
4. Set the remote control to sound operation mode.

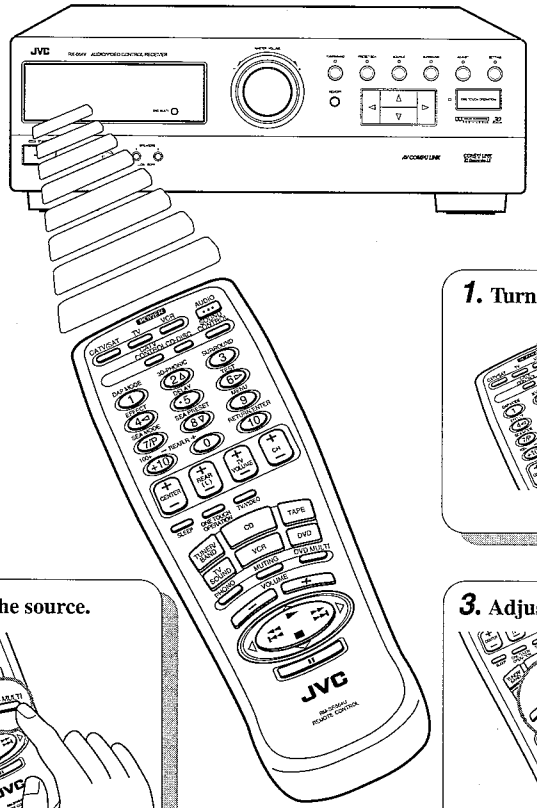


5. Surround settings are preset at the factory. However, if you need to make further adjustments, see pages 26 to 37.

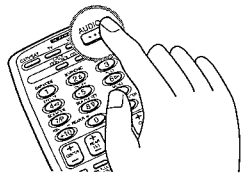


For Reproducing DVD MULTI Playback with your DVD player

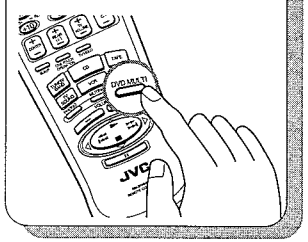




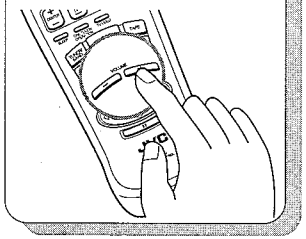
1. Turn on the power.



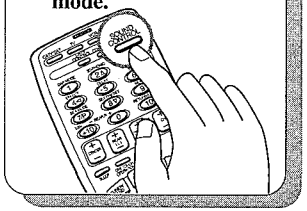
2. Select the source.



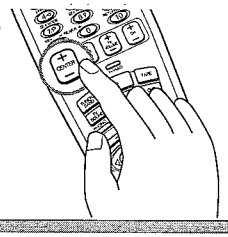
3. Adjust the volume.



4. Set the remote control to sound operation mode.



5. Surround settings are preset at the factory. However, if you need to make further adjustment, see pages 38 and 39.



Getting Started

This section explains how to connect stereo components and speakers to the receiver, and how to connect the power supply.

Before Installation

General

- Be sure your hands are dry.
- Turn the power off to all components.
- Read the manuals supplied with the components you are going to connect.

Locations

- Install the receiver in a location that is level and protected from moisture.
- The temperature around the receiver must be between 23° and 95° F (–5° and 35° C).
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.

Handling the receiver

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.

Checking the Supplied Accessories

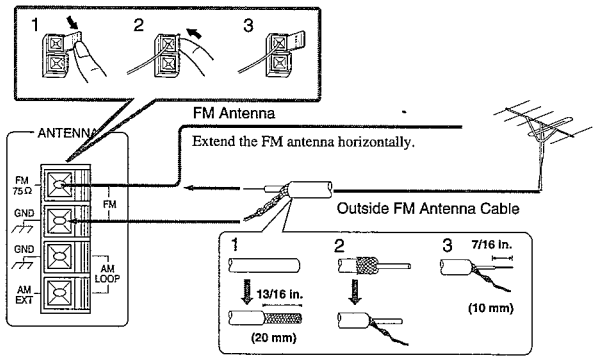
Check to be sure you have all of the following items, which are supplied with the receiver.
The number in the parentheses indicates quantity of the pieces supplied.

- **Remote Control (1)**
- **Batteries (2)**
- **AM Loop Antenna (1)**
- **FM Antenna (1)**

If anything is missing, contact your dealer immediately.

Connecting the FM and AM Antennas

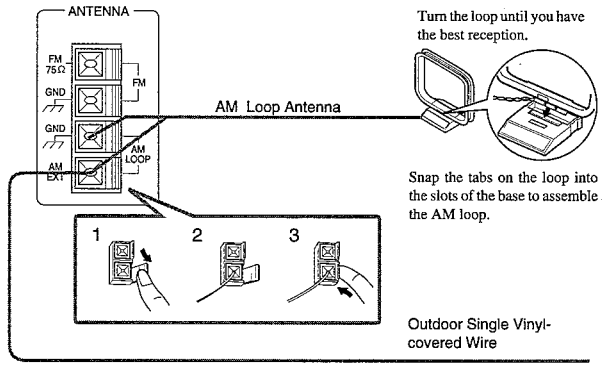
FM Antenna Connections



How to strip the 75 Ω coaxial cable and connect it to the FM terminals

1. Strip back the outside covering of the 75 Ω coaxial cable to expose the braided metallic mesh about 13/16 inches (20 mm).
2. Pull the mesh back and twist it into a single connector as shown in the illustration above.
3. Strip the insulation about 7/16 inches (10 mm) back from the central wire.
4. Insert the twisted mesh and the central wire to the FM terminals, as shown in the illustration above.

AM Antenna Connections



Note:

If reception is poor, connect the outside antenna.
Before attaching a 75 Ω coaxial cable (the kind with a round wire going to an outside antenna), disconnect the supplied FM wire antenna.

Notes :

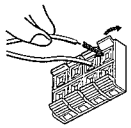
- *Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.*
- *If reception is poor, connect an outdoor single vinyl-covered wire to the AM EXT terminal. (Keep the AM loop antenna connected.)*

Connecting the Speakers

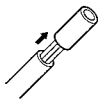
You can connect the following speakers:

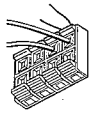
- Two sets of front speakers to produce normal stereo sound
- One set of rear speakers to enjoy the surround effect
- One center speaker to produce more effective surround effect (to make human voices outstanding)
- One subwoofer to enhance the bass

For each speaker (except for subwoofer), connect one end of the speaker signal cable (not supplied) to the speaker terminal on the rear panel and the other end to the speaker. (For connecting a subwoofer, see page 10.)



1. **Open each terminal.**
2. **Insert the end of the speaker signal cable as shown (be sure to remove the insulation at the end of each wire first).**

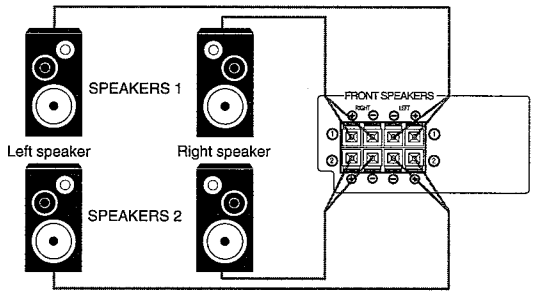




3. **Close the terminals to clamp the speaker signal cables firmly in place.**
4. **Connect the (–) and (+) terminals on the rear panel to the (–) and (+) terminals marked on the speakers.**

Connecting the front speakers

Connect the front speakers to the FRONT SPEAKERS terminals.

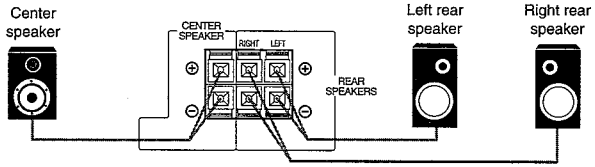


CAUTION:

When connecting speakers, use speakers with the SAME IMPEDANCE indicated by the speaker terminals.

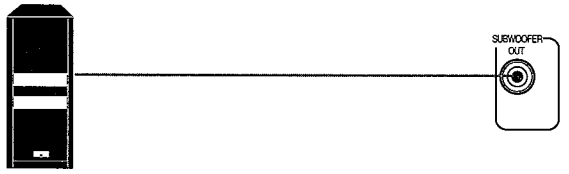
Connecting the rear and center speakers

Connect the rear speakers to the REAR SPEAKERS terminals and the center speaker to the CENTER SPEAKER terminals.



Connecting the subwoofer

Connect the input jack of a powered subwoofer to the SUBWOOFER OUT jack on the rear panel, using a cable with RCA pin plugs.



Notes:

- *When you connect rear speakers, make sure that both left and right speakers are connected; otherwise, no sound will come out of the rear speakers.*
- *You can register the center speaker size after you finish its connection. If you register it, you do not have to set the center speaker mode while setting the surround mode. (If you do not use a center speaker, register that information.) See page 19.*

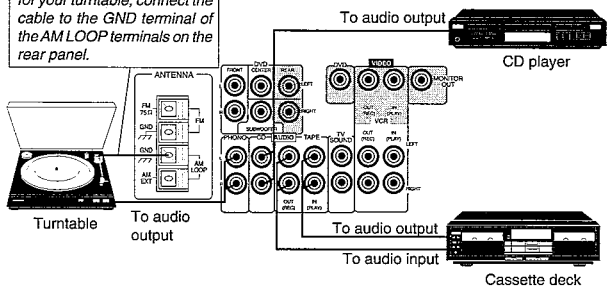
Connecting Audio/Video Components

You can connect the following components to the receiver using cables with RCA pin plugs.

Audio Components	Video Components
• Turntable	• TV
• CD player	• VCR
• Cassette deck	• DVD player

Audio component connections

If a ground cable is provided for your turntable, connect the cable to the GND terminal of the AM LOOP terminals on the rear panel.

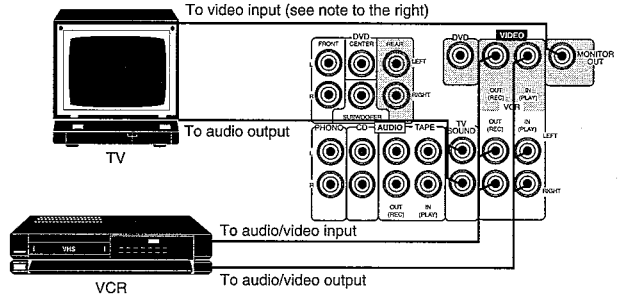


If your audio components have a COMPU LINK-3 terminal

The COMPU LINK remote control system allows you to control other JVC audio components from the receiver or vice versa.
For detailed information about the COMPU LINK-3 remote control system, see page 40.

Video component connections

TV and VCR connection



CAUTION:

If you connect a sound-enhancing device such as a graphic equalizer between the source components and this receiver, the sound output through this receiver may be distorted.

Note:

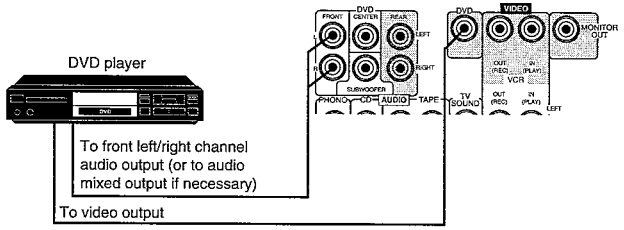
Any turntables incorporating a small-output cartridge such as an MC (moving-coil type) must be connected to the receiver through a commercial head amplifier or step-up transformer. Direct connection may result in unsufficient volume.

Note:

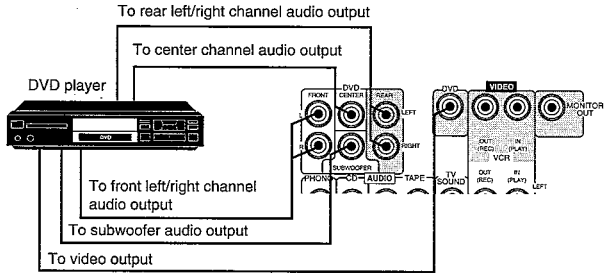
When connecting a JVC TV:
- *If you use the AV COMPU LINK remote control system to operate the TV, connect the receiver to the **Video Input 2 jack** on the TV.*
- *If you do not use the AV COMPU LINK remote control system to operate the TV, connect the receiver to the **Video Input 1 jack** on the TV.*

DVD player connection

- When you play back a disc on the DVD player in stereo (or the audio output setting of the DVD player is mixed to two front channels):



- When you play back a disc on the DVD player with its analog discrete output mode (5.1 CH reproduction) selected:


To rear left/right channel audio output
To center channel audio output
DVD player
To front left/right channel audio output
To subwoofer audio output
To video output

If your audio components have an AV COMPU LINK terminal

The AV COMPU LINK remote control system allows you to control other JVC video components from the receiver or vice versa.
For detailed information about the connection and the AV COMPU LINK remote control system, see page 41.

Connecting the Power Cord

Before plugging the receiver into an AC outlet, make sure that all connections have been made.
When the power cord is connected, the STANDBY lamp above the POWER button lights up.

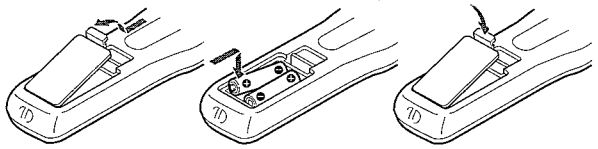
Keep the power cord away from the connecting cables for the TV, VCR, and antenna. The power cord may cause noise or screen interference. We recommend that you use a coaxial cable to connect the antenna, since it is well-shielded against interference.

Putting Batteries in the Remote Control

Before using the remote control, put the two supplied batteries in first. When using the remote control, aim the remote control directly at the remote sensor on the receiver.

1. **On the back of the remote control, remove the battery cover as illustrated.**
2. **Insert batteries. Make sure to observe the proper polarity: (+) to (+) and (–) to (–).**
3. **Replace the cover.**

R6P (SUM-3)/AA (15F)



If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6P (SUM-3)/AA (15F) type dry-cell batteries.

Notes:

- *A small amount of power is always consumed even in standby mode. To switch off the power completely, unplug the power cord from the AC outlet.*
- *If the power cord is unplugged (or a power failure occurs), preset settings will be erased in a few days.*

CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. When unplugging the receiver, always grasp the plug itself so as not to damage the cord.

CAUTIONS:

Follow these precautions to avoid leaking or cracking cells:

- Place batteries in the remote control so they match the polarity indicated: (+) to (+) and (–) to (–).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

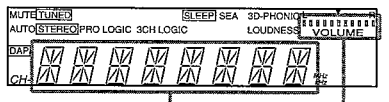
Basic Operations

The following operations are commonly used when you play any sound source.

Turning the Power On and Off

On the front panel:

To turn on the power, press POWER.
The STANDBY lamp goes off. The name of the current source (or station frequency) appears on the display.



Current source name appears — Current volume level is shown here

To turn off the power, press POWER again.
The STANDBY lamp lights up.

From the remote control:

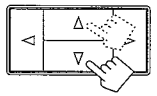
To turn on the power, press AUDIO.
The STANDBY lamp goes off. The name of the current source (or station frequency) appears on the display.

To turn off the power, press AUDIO again.
The STANDBY lamp lights up.

Selecting the Source to Play

On the front panel:

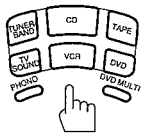
1. **Press SOURCE so that the Control △ / ▽ buttons work for selecting the source.**
   The lamp above the button lights up.
2. **Press Control △ / ▽ until the source name you want appears on the display.**



From the remote control:

Press one of the source buttons directly.

TUNER/BAND*	Listen to the radio. Each time you press the button, the band alternates between FM and AM.
CD*	Listen to the CD player.
TAPE*	Listen to the cassette deck.
TV SOUND	Listen to TV sounds.
VCR	View the playback picture from the VCR.
DVD	Play back a stereo digital video disc.
PHONO*	Listen to a record.
DVD MULTI	Play back a digital video disc using the analog discrete output mode (5.1 CH reproduction) on the DVD player.



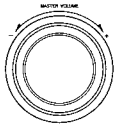
Notes:

- *When you press one of the source buttons on the remote control marked with an asterisk (*), the receiver automatically turns on.*
- *When connecting this receiver and the DVD player by using the AV COMPU LINK cable, "DVD MULTI" is always selected when you start playing a disc of 5.1 ch surround. You can change it to "DVD" after playback starts.*

Adjusting the Volume

On the front panel:

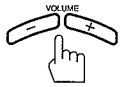
To increase the volume, turn MASTER VOLUME clockwise.
To decrease the volume, turn it counterclockwise.



When you turn MASTER VOLUME **rapidly**, the volume level also changes **rapidly**.
When you turn MASTER VOLUME **slowly**, the volume level also changes **slowly**.

From the remote control:

To increase the volume, press VOLUME +.
To decrease the volume, press VOLUME –.



Selecting the Front Speakers

On the front panel *only*:

When you have connected two sets of front speakers, you can select which to use. Pressing SPEAKERS 1 or SPEAKERS 2 activiates the respective set of speakers.

To use the set of speakers connected to the FRONT SPEAKERS ① terminals, press SPEAKERS 1 to set it in the ▬ON position, and press SPEAKERS 2 to set it in the ▮ OFF position.
To use the set of speakers connected to the FRONT SPEAKERS ② terminals, press SPEAKERS 2 to set it in the ▬ON position, and press SPEAKERS 1 to set it in the ▮ OFF position.
To use both set of speakers, press both SPEAKERS 1 and 2 to set them in the ▬ON position.
To use neither set of speakers, press both SPEAKERS 1 and 2 to set them in the ▮ OFF position.

Muting the Sound

From the remote control *only*:

Press MUTING to turn off the sound through all speakers and headphones connected.
"MUTE" appears on the display and the volume turns off.

To restore the sound, press MUTING again.
Turning MASTER VOLUME or pressing VOLUME +/– also restores the sound.

CAUTION:

Always set the volume to the minimum before starting any source. If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

Note:

The volume level can be adjusted within the range of "0" (minimum) to "62" (maximum).

Notes:

- *When only one set of the front speakers is connected to either the FRONT SPEAKERS ① or ② terminals, do not press both SPEAKERS 1 and 2 to set them in the ▬ON position. If you do, no sound comes out of the front speakers.*
- *The SPEAKERS 1 and 2 buttons do not affect the sound output of the center and rear speakers.*

Recording a Source

You can record any source playing through the receiver to a cassette deck connected to the TAPE jacks and the VCR connected to the VCR jacks at the same time.
While recording, you can listen to the selected sound source at whatever sound level you like, without affecting the sound levels of the recording.

Listening with Headphones

A standard pair of headphones can be connected to the PHONES jack on the front panel. **Be sure to turn down the volume before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.**

To listen with only headphones
Press both SPEAKERS 1 and 2 to set them in the ▮OFF position.

Note:

The following sound modes cannot affect the recording.

- *Preset SEA modes: (see page 24)*
- *3D-PHONIC modes: (see page 27)*
- *DAP modes: (see page 29)*
- *DVD MULTI playback mode: (see page 38)*

Note:

The SPEAKERS 1 and 2 buttons do not affect the sound output of the center and rear speakers.

Basic Settings

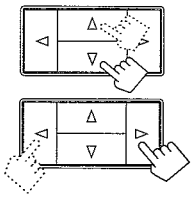
Some of the following settings are required after connecting and positioning your speakers in your listening room, while others will make operations easier.

Adjusting the Front Speaker Output Balance

If the sounds you hear from the front right and left speakers are unequal, you can adjust the speaker output balance.

On the front panel *only*:

1. **Press SETTING so that the Control △ / ▽ / ◁ / ▷ buttons work for adjusting the balance.**
   The lamp above the button lights up.
2. **Press Control △ / ▽ until "BALANCE" appears on the display.**



3. **Press Control ◁ / ▷ to adjust the balance.**
   - Pressing Control ◁ decreases the right channel output.
   - Pressing Control ▷ decreases the left channel output.

Note:

If the balance is not set at the center, "BALANCE◁" or "BALANCE▷" will appear in step 2.

Listening at Low Volume (Loudness)

Human ears are not sensitive to bass at low volume. To compensate for this, the Loudness function automatically boosts the bass level as you lower the volume.

On the front panel *only*:

1. **Press SETTING so that the Control △ / ▽ / ◁ / ▷ buttons work for setting the Loudness function.**
   The lamp above the button lights up.
2. **Press Control △ / ▽ until "LOUDNESS" appears on the display.**
3. **Press Control ◁ / ▷ to set the Loudness function to "ON" or "OFF."**
   - Select "ON " to activate the Loudness function.
     The LOUDNESS indicator lights up on the display.
   - Select "OFF" to cancel it.
     The indicator goes off.

Using the Sleep Timer

Using the Sleep Timer, you can fall asleep to music and know the receiver will turn off by itself rather than play all night.

On the front panel:

1. **Press SETTING so that the Control △ / ▽ / ◁ / ▷ buttons work for setting the Sleep Timer**
   The lamp above the button lights up.
2. **Press Control △ / ▽ until "SLEEP" appears on the display.**
3. **Press Control ◁ / ▷ to set the shut-off time.**
   The SLEEP indicator lights up on the display.
   Each time you press the button, the shut-off time on the display changes as follows:

10 ⟷ 20 ⟷ 30 ⟷ 40 ⟷ 50 ⟷ 60 ⟷ 70 ⟷ 80
0
(Canceled)

When the shut-of f time comes

The receiver turns off automatically.

To check or change the time r emaining until the shut-of f time

1. Press SETTING, if necessary, so that the Control △ / ▽ / ◁ / ▷ buttons work for setting the Sleep Timer.
2. Press Control △ / ▽, if necessary, until "SLEEP" appears on the display.
3. Press Control ◁ / ▷.
   The remaining time until the shut-off time appears in minutes.
   - To change the shut-off time, press Control ◁ / ▷ repeatedly.

To cancel the Sleep T imer

Press Control ◁ / ▷ repeatedly in step 3 above until "0" appears on the display. (The SLEEP indicator goes off.)
Turning off the power also cancels the Sleep Timer.

From the remote control:

Press SLEEP repeatedly.

The SLEEP indicator lights up and the shut-off time appears on the display.
Each time you press the button, the shut-off time on the display changes as follows:

10 ⟶ 20 ⟶ 30 ⟶ 40 ⟶ 50 ⟶ 60 ⟶ 70 ⟶ 80
0
(Canceled)

To check or change the time r emaining until the shut-of f time

Press SLEEP once. The remaining time until the shut-off time appears in minutes.
- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep T imer

Press SLEEP repeatedly until "0" appears on the display. (The SLEEP indicator goes off.)
Turning off the power also cancels the Sleep Timer.

Selecting the Center Speaker Size

You can register the information about the center speaker after all connections are completed.
If you do this registration first, you do not have to adjust the center speaker mode when you want to activate the surround sound.

On the front panel *only*:

1. **Press SETTING so that the Control △ / ▽ / ◁ / ▷ buttons work for selecting the center speaker size.**
   The lamp above the button lights up.
2. **Press Control △ / ▽ until "CNTR SPK" (Center Speaker) appears on the display.**
3. **Press Control ◁ / ▷ to select the appropriate item about your center speaker.**
   Each time you press the button, the display changes to show the following:

SMALL:	Select this mode when the size of the center speaker is smaller than that of the front speakers.
LARGE:	Select this mode when the size of the center speaker is the same as that of the front speakers.
NO:	Select this mode when you do not use a center speaker.

Note:

This "center speaker size" setting is so related to the center mode setting for surround modes that changing this setting affects and changes the center mode to a relevant mode, and vice versa. For example;

- *If you select "**SMALL**," the center mode is automatically set to "**NORMAL**," and vice versa.*
- *If you select "**LARGE**," the center mode is automatically set to "**WIDE**," and vice versa.*
- *If you select "**NO**,"*
  - *– For PRO LOGIC and THEATER, the center mode is set to "**PHANTOM**."*
  - *– For 3CH LOGIC, the center mode is set to "**NORMAL**."*

One Touch Operation

This receiver can memorize the optimum sound settings for each playing source.

About the One Touch Operation

JVC's One Touch Operation function is used to assign and store different sound settings for each different playing source. By using this function, you do not have to change the settings every time you change the source. The stored settings for the newly selected source are automatically recalled.

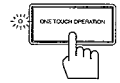
The following can be stored for each source:

- Volume level (see page 15)
- Balance (see page 17)
- Loudness (see page 17)
- Preset SEA modes (see page 24)
- 3D-PHONIC mode settings (see page 27)
- DAP mode settings (see page 29)
- Surround mode settings (see page 37)

Using the One Touch Operation

To stor e the sound settings

1. **Press ONE TOUCH OPERATION.**
   The ONE TOUCH OPERATION lamp lights up, then the previously memorized settings are recalled and appear on the display in turn.



2. **Adjust the sound using the functions listed above.**
   The newly adjusted settings are memorized.

To r ecall the sound settings

With the ONE TOUCH OPERATION lamp lit, the settings for the currently selected source is recalled, and appears on the display when the source is selected.

To cancel the One T ouch Operation function

Press ONE TOUCH OPERATION so that the lamp goes off.
(Even though the One Touch Operation function is canceled, the recalled sound effects remain active.)

Notes:

- *If the source is TUNER/BAND, the One Touch Operation function memorizes the settings each for the FM and AM band.*
- *3D-PHONIC mode, DAP mode, and surround mode cannot be used at the same time.*

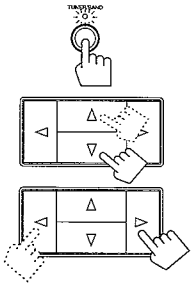
Receiving Radio Broadcasts

You can browse through all the stations or use the preset function to go immediately to a particular station.

Tuning in Stations Manually

On the front panel *only*:

1. **Press TUNER/BAND.**
   The lamp above the button lights up.
   Each time you press the button, the band alternates between FM and AM.



2. **Press Control △ / ▽ until "–TUNING+" appears on the display.**

3. **Press Control ◁ / ▷ until you find the frequency you want.**
   - Pressing Control ◁ decreases the frequency.
   - Pressing Control ▷ increases the frequency.

Using Preset Tuning

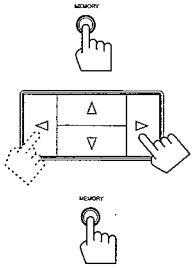
Once a station is assigned to a channel number, the station can be quickly tuned. You can preset up to 40 stations at random.

To stor e the pr eset stations

On the front panel *only*:

1. **Tune in the station you want to preset (see above).**
   If you want to store the FM reception mode for this station, select the FM reception mode you want. See page 23 for details.

2. **Press MEMORY.**
   The channel number starts flashing on the display for about 5 seconds.



3. **Press Control ◁ / ▷ to select a channel number while the channel number position is flashing.**
   - Pressing Control ◁ decreases the number.
   - Pressing Control ▷ increases the number.

4. **Press MEMORY again while the selected channel number is flashing on the display.**
   The selected channel number stops flashing.
   The station is assigned to the selected channel number.

Notes:

- *When you hold down Control ◁ / ▷ in step 3, the frequency keeps changing until you press Control ◁ / ▷ again or a station is tuned in.*
- *When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.*
  When an FM stereo program is received, the STEREO indicator also lights up.

CAUTION:

Preset stations may be erased in a few days when power is cut off to the receiver, as when it is unplugged from the AC outlet or a power failure occurs. If the preset stations are lost, simply set the stations again.

Note:

You can press 10 keys on the remote control to select a channel number in step 3, if you have pressed TUNER/BAND on the remote control prior to starting this preset procedures.

- *For channel number 5, press 5.*
- *For channel number 15, press +10 then 5.*
- *For channel number 20, press +10 then 10.*
- *For channel number 30, press +10, +10, then 10.*

5. **Repeat steps 1 to 4 until you store all the stations you want.**

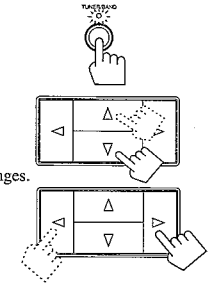
To cancel a stor ed pr eset station

Storing a new station on a used number erases the previously stored one.

To tune in a pr eset station

On the front panel:

1. **Press TUNER/BAND so that the Control △ / ▽ / ◁ / ▷ buttons work for tuner settings.**
   The lamp above the button lights up.

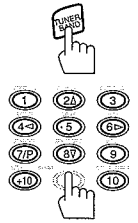


2. **Press Control △ / ▽ until "–PRESET+" appears on the display.**

3. **Press Control ◁ / ▷ to select a preset channel.**
   Each time you press the button, the preset channels changes.
   - Pressing Control ◁ changes preset channels in decreasing order.
   - Pressing Control ▷ changes preset channels in increasing order.

From the remote control:

1. **Press TUNER/BAND.**
   Each time you press the button, the band alternates between FM and AM.



2. **Press 10 keys to select a preset channel number.**
   - For channel number 5, press 5.
   - For channel number 15, press +10 then 5.
   - For channel number 20, press +10 then 10.
   - For channel number 30, press +10, +10, then 10.

Note:

If you adjust the sound by using SOUND CONTROL while listening to a station, the 10 keys will work for adjusting the sound. To select a preset channel number after the sound adjustment, press TUNER/BAND again, so the 10 keys will work for selecting the preset channel numbers.

Receiving Radio Broadcasts

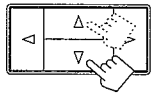
Selecting the FM Reception Mode

You can change the FM reception mode while receiving an FM broadcast.

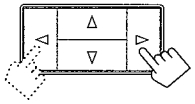
On the front panel *only*:

1. **Press TUNER/BAND so that the Control △ / ▽ / ◁ / ▷ buttons work for tuner settings.**
   The lamp above the button lights up.

2. **Press Control △ / ▽ until "FM MODE" appears on the display.**



3. **Press Control ◁ / ▷ to select either "FM AUTO" or "FM MONO."**
   - Normally select "FM AUTO."
   - When an FM stereo broadcast is hard to receive or noisy, select "FM MONO."



FM AUTO:	When a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sounds. This mode is also useful to suppress static noise between stations. The MUTE AUTO indicator lights up on the display.
FM MONO:	Reception will be improved although you will lose the stereo effect. In this mode, you will hear noise while tuning into the stations. The MUTE AUTO indicator goes off on the display.

Note:

You can store the FM reception mode for each preset station.

Using the Preset SEA Modes

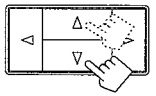
The preset SEA (Sound Effect Amplifier) modes give you control of the way your music sounds.

Selecting Your Favorite SEA Mode

On the front panel:

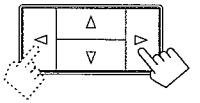
1. **Press PRESET SEA so that the Control △ / ▽ / ◁ / ▷ buttons work for preset SEA setting.**
   The lamp above the button lights up.

2. **Press Control △ / ▽ until the preset SEA mode you want appears on the display.**
   The SEA indicator also lights up on the display.
   Each time you press the button, the preset SEA modes change as follows:



   Movie ⟷ Sports ⟷ Music → OFF →

3. **Press Control ◁ / ▷ to select the effect level.**
   Each time you press the button, the effect level changes as follows:



   When Movie is selected:
   MOVIE 1 ⟷ MOVIE 2 ⟷ MOVIE 3

   When Sports is selected:
   SPORTS1 ⟷ SPORTS2 ⟷ SPORTS3

   When Music is selected:
   JAZZ 1 ⟷ JAZZ 2 ⟷ ROCK 1 ⟷ ROCK 2 ⟷ COUNTRY2 ⟷ COUNTRY1 ⟷ MUSICAL2 ⟷ MUSICAL1

Movie:	Adds breadth to sounds so you feel like you are in a movie theater.
Sports:	Makes sounds exciting.
Music:	Select one of the modes below. **JAZZ:** Gives a feeling of a live atmosphere. Good for acoustic music. **ROCK:** Gives a heavy sound. Both high and low frequencies are boosted. **MUSICAL:** Enhances the mid-frequency range, which the human voice is mostly made up of. **COUNTRY:** Enhances the high-frequency range so that instruments such the violin and banjo are emphasized.
OFF:	No preset SEA mode is applied.

To cancel the pr eset SEA mode

Select "OFF" in step 2 above.
The SEA indicator goes off from the display.

Notes:

- *The preset SEA modes cannot be used for recording.*
- *When you turn on the preset SEA mode, the mode with its effect level previously selected is recalled at first.*

Using the Preset SEA Modes

From the remote control:

1. **Press SOUND CONTROL so that 10 keys work for adjusting the sound.**

2. **Press SEA MODE until the preset SEA mode you want appears on the display.**
   The previously selected mode is recalled (at its previous effect level) and is shown on the display.
   Each time you press the button, the preset SEA modes change as follows:

Music → Sports → Movie → OFF →

3. **Press SEA PRESET to select the effect level.**
   Each time you press the button, the effect level changes as follows:

When Music is selected:

JAZZ 1 → JAZZ 2 → ROCK 1 → ROCK 2 → COUNTRY2 ← COUNTRY1 ← MUSICAL2 ← MUSICAL1 ←

When Sports is selected:

SPORTS1 → SPORTS2 → SPORTS3

When Movie is selected:

MOVIE 1 → MOVIE 2 → MOVIE 3

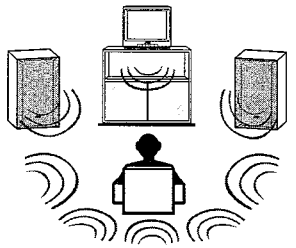
To cancel the pr eset SEA mode

Select "OFF" in step 2 above.
The SEA indicator goes off from the display.

Using the Surround Processor

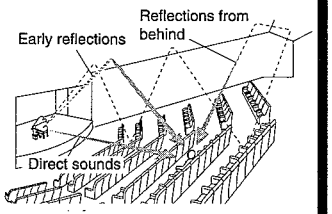
The built-in surround processor provides three groups of Surround Processor modes — JVC 3D-PHONIC mode, DAP (Digital Acoustic Processor) mode, and surround modes (Dolby Surround and JVC Theater Surround).

On JVC 3D-PHONIC mode



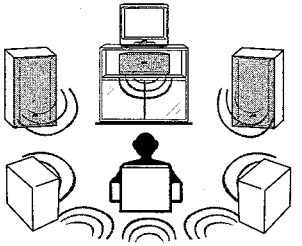
JVC 3D-PHONIC mode gives you such a nearly surround effect as it is reproduced through the Dolby Surround decoder, which is widely used to reproduce sounds with a feeling of movement like those experienced in movie theaters. JVC 3D-PHONIC mode is the result of research on sound localization technology carried out at JVC for many years and makes it possible to reproduce the surround sound **with only two front speakers.**

On the DAP mode



The sound heard in a concert hall or club consists of direct sound and indirect sound — early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls. These direct sounds and indirect sounds are the most important elements of the acoustic surround effects. The DAP mode can create these important elements, and gives you a real "being there" feeling **by using the front speakers and rear speakers.**

On sur round modes



With this receiver, you can use two types of the surround mode.

Dolby Surround
Dolby Surround has been developed to reproduce the important elements of the acoustic surround at home.
To watch the soundtracks of video software bearing the mark DOLBY SURROUND * which includes the same encoded surround information as found in Dolby Stereo films, the receiver can provide you with 2 Dolby Surround modes (Dolby Pro Logic and Dolby 3ch Logic).

Dolby Pro Logic: Select this mode when optional center and rear speakers are connected.

Dolby 3ch Logic: Select this mode when a center speaker is connected without rear speakers.

JVC Theater Surround
In order to reproduce a more realistic sound field in your listening room while playing sound tracks of video software bearing the mark DOLBY SURROUND , JVC Theater Surround has been designed to give you clear vocals and to create a real "being there" feeling. The sound is reproduced through the **front speakers, rear speakers and center speaker.**

Notes:

- *The surround processor has no effect on monaural sources.*
- *The surround processor cannot be used for recording.*
- *You cannot use the two types of the surround processor mode at the same time.*
- *When you select "DVD MULTI" as the source to play, you cannot select or adjust 3D-PHONIC, DAP or surround modes.*

* *Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under Canadian patent number 1,037,877. "Dolby," the double-D symbol and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.*

As for the DVD MULTI Playback Mode, see pages 38 and 39.

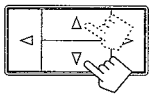
Using JVC 3D-PHONIC Modes

When using JVC 3D-PHONIC modes, you need only two front speakers to reproduce the soundtracks of video software bearing the mark DOLBY SURROUND.
The 3D-PHONIC modes give you very realistic surround effects as if the sound is reproduced through the Dolby Surround decoder.

On the front panel:

1. **Press SURROUND so that the Control △ / ▽ / ◁ / ▷ buttons work for selecting the Surround Processor mode.**
   The lamp above the button lights up.

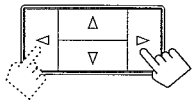
2. **Press Control △ / ▽ until one of the 3D-PHONIC mode ("3DACTION," "3DTHEATR" or "3DDRAMA") appears on the display.**
   Each time you press the button, Surround Processor mode changes as follows:



Ex. → PROLOGIC ⟷ THEATER ⟷ 3CHLOGIC →
→ OFF ⟷ 3DACTION* ⟷ PAVILION* →
(One of the three modes appears)

* As for the DAP modes (see page 29) and the 3D-PHONIC modes, one of the previously selected mode appears on the display.

3. **Press Control ◁ / ▷ until the 3D-PHONIC mode you want appears on the display.**
   Each time you press the button, the 3D-PHONIC modes change as follows:

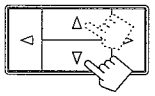


→ 3DACTION ⟷ 3DTHEATR ⟷ 3DDRAMA →

3DACTION	Best for action and war movies — where the action is fast and explosive.
3DTHEATR	Reproduces the sound field of a large theater.
3DDRAMA	Best for dramas and romantic movies — where the action is slow and soft.

4. **Press ADJUST so that Control △ / ▽ buttons work for adjusting the effect level.**
   The lamp above the button lights up.

5. **Press Control △ / ▽ until "–EFFECT+" appears on the display.**



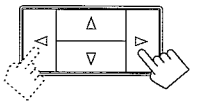
Note:

When one of the 3D-PHONIC modes is selected, the 3D-PHONIC indicator also lights up on the display.

Note:

Once you have adjusted the effect level, it is memorized for each 3D-PHONIC mode.

6. **Press Control ◁ / ▷ to adjust the effect level.**
   Each time you press the button, the effect level changes as follows:



→ EFFECT 1 ⟷ EFFECT 2 ⟷ EFFECT 3 →
→ EFFECT 5 ⟷ EFFECT 4 →

As the number increases the effect of the selected 3D-PHONIC mode becomes stronger.

7. **Select and play a sound source which was processed with Dolby Surround and is labeled with DOLBY SURROUND mark.**

To cancel the 3D-PHONIC mode

Select "OFF" in step 2.
The 3D-PHONIC indicator goes off from the display.

From the remote control:

1. **Press SOUND CONTROL so that 10 keys work for adjusting the sound.**

2. **Press 3D-PHONIC to select the 3D-PHONIC mode you want.**
   The previously selected mode is recalled at first (at its previous effect level) and is shown on the display.
   The 3D-PHONIC indicator also lights up on the display.
   Each time you press the button, the 3D-PHONIC modes change as follows:

→ 3DTHEATR → 3DDRAMA → 3DACTION →
OFF ←

3. **Press EFFECT to select the effect level.**
   Each time you press the button, the level changes as follows:

→ EFFECT 1 → EFFECT 2 → EFFECT 3 →
EFFECT 5 ← EFFECT 4 ←

As the number increases,the effect of the selected 3D-PHONIC mode becomes stronger.

4. **Select and play a sound source which was processed with Dolby Surround and is labeled with DOLBY SURROUND mark.**

To cancel the 3D-PHONIC mode

Select "OFF" in step 2 above.
The 3D-PHONIC indicator goes off from the display.

Note:

The 3D-PHONIC mode is not used with other Surround Processor modes such as Dolby Surround, JVC Theater Surround and the DAP modes. When the 3D-PHONIC mode is turned on, the other Surround Processor mode, if used, will be turned off.

Note:

Once you have adjusted the effect level, it is memorized for each 3D-PHONIC mode.

Using the DAP Modes

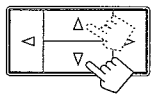
You can use five DAP modes — "Dance Club, Live Club, Hall, Pavilion, and Headphones." These modes (except "Headphones") require the front speakers and the rear speakers, but do not require a center speaker to enlarge the sound field.

Among the DAP modes, "Headphones" is very special. It can create the same stereo sound as you listen through the speakers off air while listening to a source using headphones. So, you can feel as if you were not using the headphones and listening to music in a room.

On the front panel:

1. **Press SURROUND so that the Control △ / ▽ / ◁ / ▷ buttons work for selecting the Surround Processor mode.**
   The lamp above the button lights up.

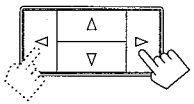
2. **Press Control △ / ▽ until one of the DAP mode ("HEAD P," "PAVILION," "HALL," "LIVE C" or "DANCE C") appears on the display.**
   Each time you press the button, the Surround Processor modes change as follows:



Ex. → PROLOGIC ⟷ THEATER ⟷ 3CHLOGIC
→ OFF ⟷ 3DACTION* ⟷ PAVILION* ←
(One of the five modes appears)

* As for the 3D-PHONIC modes (see page 27) and the DAP modes, one of the previously selected mode appears on the display.

3. **Press Control ◁ / ▷ until the DAP mode you want appears on the display.**
   Each time you press the button, the DAP modes change as follows:



→ HEAD P ⟷ PAVILION ←
→ DANCE C ⟷ LIVE C ⟷ HALL ←

HEAD Phones*	Gives a spacious stereo effect when listening with headphones.
PAVILION	Gives the spacious feeling of a pavilion with a high ceiling.
HALL	Gives clear vocal and the feeling of a concert hall.
LIVE Club	Gives the feeling of a live music club with a low ceiling.
DANCE Club	Gives a throbbing bass beat.

* When you select "HEAD P," you cannot go to the following steps. No adjustments can be made for "Headphones."

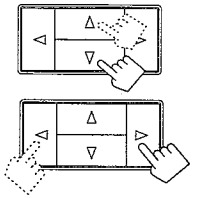
4. **Press ADJUST so that the Control △ / ▽ / ◁ / ▷ buttons work for adjusting the selected mode.**
   The lamp above the button lights up.

Note:
When one of the DAP modes is selected, the DAP indicator also lights up on the display.

Note:
When changing the DAP modes to "PAVILION" or "HALL," a reverberation sound comes out. This is because a long reverberation is applied to these two modes.

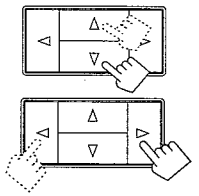
5. **Press Control △ / ▽ until "– REAR +" appears on the display.**

6. **Press Control ◁ / ▷ to adjust the rear speaker output level.**
   - Pressing Control ◁ decreases the output level up to –10 dB.
   - Pressing Control ▷ increases the output level up to +10 dB.



7. **Press Control △ / ▽ until "–EFFECT+" appears on the display.**

8. **Press Control ◁ / ▷ to adjust the effect level.**
   Each time you press the button, the effect level changes as follows:



→ EFFECT 1 ⟷ EFFECT 2 ⟷ EFFECT 3 ←
→ EFFECT 5 ⟷ EFFECT 4 ←

As the number increases, the effect of the selected DAP mode becomes stronger.

To cancel the DAP mode

Select "OFF" in step 2.
The DAP indicator goes off from the display.

From the remote control:

1. **Press SOUND CONTROL so that 10 keys work for adjusting the sound.**

2. **Press DAP MODE to select the DAP mode you want.**
   The previously selected mode is recalled at first (at its previous effect level) and is shown on the display.
   The DAP indicator also lights up on the display.
   Each time you press the button, the DAP modes change as follows:

→ HEAD P ⟶ PAVILION ⟶ HALL →
→ OFF ⟵ DANCE C ⟵ LIVE C ←

* When you select "HEAD P" (or "OFF"), you cannot go to the following steps. No adjustments can be made for "Headphones."

3. **Press REAR (L) +/– to adjust the rear speaker output level.**
   - Pressing REAR (L) – decreases the output level up to –10 dB.
   - Pressing REAR (L) + increases the output level up to +10 dB.

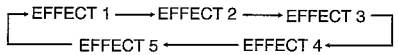
Continued to the next page.

Note:
Once you have adjusted the DAP modes, the adjustment is memorized for each DAP mode.

Note:
When adjusting the effect level for "PAVILION" or "HALL," a reverberation sound comes out. This is because a long reverberation is applied to these two modes.

Note:
Once you have adjusted the DAP modes, the adjustment is memorized for each DAP mode.

4. **Press EFFECT to select the effect level.**
   Each time you press the button, the effect level changes as follows:



To cancel the DAP mode

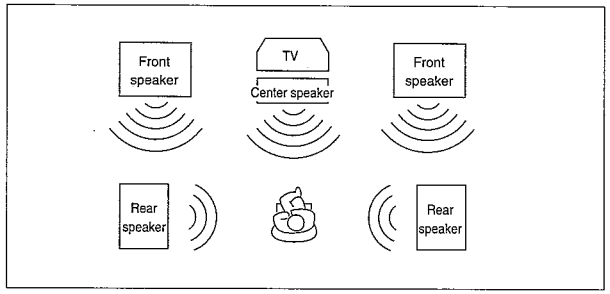
Select "OFF" in step 2.
The DAP indicator goes off from the display.

With this receiver, you can use two types of the surround modes — Dolby Surround and JVC Theater Surround.

Speaker Arrangements for Surround Modes

The following illustrations show how to obtain the optimum sound environment for various surround mode settings. Try to find the speaker direction and location to create the optimum sound field.

CASE 1 **When you have added a center speaker and rear speakers**

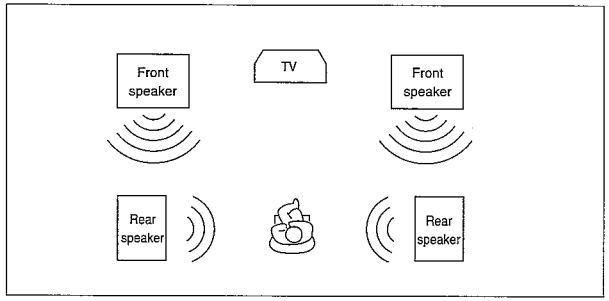


In this case:

1. Select "PROLOGIC" or "THEATER."
2. Select "NORMAL" or "WIDE" for center mode.

See pages 33 to 36 for more details.

CASE 2 **When you have added rear speakers (without a center speaker)**

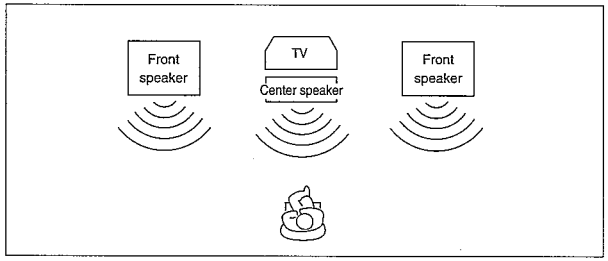


In this case:

1. Select "PROLOGIC" or "THEATER."
2. Select "PHANTOM" for center mode.

See pages 33 to 36 for more details.

CASE 3 **When you have added a center speaker (without rear speakers)**



In this case:

1. Select "3CHLOGIC."
2. Select "NORMAL" or "WIDE" for center mode.

See pages 33 to 36 for more details.

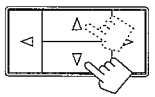
Preparing for Surround Modes

Once you have set the surround modes, you can use the same adjustments every time you want to activate the surround mode you want. The receiver memorizes surround adjustments for each mode.

On the front panel:

1. **Press SURROUND so that the Control △ / ▽ / ◁ / ▷ buttons work for selecting the Surround Processor mode.**
   The lamp above the button lights up.

2. **Press Control △ / ▽ to select one of the surround mode ("PROLOGIC," "3CHLOGIC" or "THEATER").**
   Each time you press the button, the Surround Processor modes change as follows:



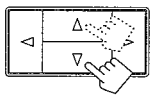
Ex. → PROLOGIC ⟷ THEATER ⟷ 3CHLOGIC → OFF ⟷ 3DACTION* ⟷ PAVILION* →

PROLOGIC	Select this mode when you use a center speaker and rear speakers.
THEATER	Select this mode to watch a video source with Dolby Surround when you have connected the rear speakers (and a center speaker). This mode gives you the feeling of a movie theater.
3CHLOGIC	Select this mode when you use a center speaker without rear speakers.
OFF	Select this to turn off the Surround Processor mode.

* You cannot select the 3D-PHONIC modes or the DAP modes in this step.
For the 3D-PHONIC modes: see pages 27 and 28.
For the DAP modes: see pages 29 and 31.

3. **Press ADJUST so that the Control △ / ▽ / ◁ / ▷ buttons work for adjusting the selected surround mode.**
   The lamp above the button lights up.

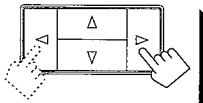
4. **Press Control △ / ▽ until "CNT MODE" (Center Mode) appears on the display.**



Note:

When one of the surround modes is selected, the corresponding indicator lights up on the display.

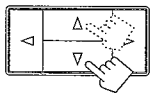
5. **Press Control ◁ / ▷ to select the center mode.**
   Each time you press the button, the center modes change as follows:



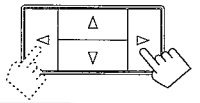
→ WIDE ⟷ NORMAL ⟷ PHANTOM →

WIDE	Select this mode when the center speaker can reproduce the bass better than the front speakers. All signals of the center channel are output through the center speaker.
NORMAL	Select this mode when the center speaker cannot reproduce the bass better than the front speakers. The bass portions of the center channel signals are output through the front speakers.
PHANTOM	Select this mode when you do not use a center speaker. The center speaker channel signals are output through the front speakers.

6. **Press Control △ / ▽ until "–DELAY +" appears on the display.**



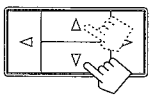
7. **Press Control ◁ / ▷ to adjust the delay time of the rear speaker output.**
   Each time you press the button, the delay time changes as follows:

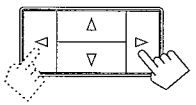


→ DELAY 1 ⟷ DELAY 2 ⟷ DELAY 3 →

DELAY 1	Select this when the distance from you to your rear speakers is greater than that to the front speakers.
DELAY 2	Select this when the distance from you to your rear speakers is almost equal to that to the front speakers.
DELAY 3	Select this when the distance from you to your rear speakers is less than that to the front speakers.

8. **Press Control △ / ▽ until "TEST" appears on the display, then press Control ◁ / ▷ to start checking the speaker output balance.**
   "TEST" starts flashing on the display, and a test tone comes out of the speakers in the following order:





Left front speaker → Center speaker → Right front speaker → Rear speakers →

Notes:

- *If you have already set the center speaker size following the procedure described on page 19, you do not have to select the center mode in this procedure.*
- *When you have selected "3CHLOGIC," you cannot select "PHANTOM."*

Note:

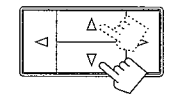
When you have selected "3CHLOGIC" or "THEATER," you cannot adjust the delay time.

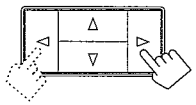
Notes:

- *No test tone comes out of the rear speakers when you have selected "3CHLOGIC."*
- *No test tone comes out of the center speaker when you select "PHANTOM" for the center mode.*

Continued to the next page.

9. **If necessary, adjust the speaker output balance as follows:**
   - To adjust the rear speaker output level, press Control △ / ▽ until "– REAR +" appears on the display, then press Control ◁ / ▷.
   - To adjust the center speaker output level, press Control △ / ▽ until "–CENTER+" appears on the display, then press Control ◁ / ▷.





10. **Press Control △ / ▽ until "TEST" appears on the display, then press Control ◁ / ▷ twice to stop the test tone.**

If you have selected JVC Theater Surround, go to the following steps.

11. **Press Control △ / ▽ until "–EFFECT+" appears on the display.**

12. **Press Control ◁ / ▷ to adjust the effect level.**
    Each time you press the button, the effect level changes as follows:

EFFECT 1 ⟷ EFFECT 2 ⟷ EFFECT 3
EFFECT 5 ⟷ EFFECT 4

As the number increases, the effect of the Theater Surround becomes stronger.

From the remote control:

If you have already set the center speaker size following the procedure described on page 19, you can use the remote control for surround mode preparation.

1. **Press SOUND CONTROL so that 10 keys work for adjusting the sound.**

2. **Press SURROUND until the Surround mode you want appears on the display.**
   The previous mode is recalled (with its previous settings) and is shown on the display.
   The indicator for that mode also lights up on the display.
   Each time you press the button, the Surround modes change as follows:

THEATER → 3CHLOGIC → PROLOGIC
OFF

3. **Press DELAY to adjust the delay time of the rear speaker output.**
   Each time you press the button, the delay time changes as follows:

DELAY 1 → DELAY 2 → DELAY 3

Notes:

- *The sound levels of the left and right rear speakers will be the same.*
- *You cannot set the sound level of the rear speakers when you have selected "3CHLOGIC."*
- *You cannot set the sound level of the center speaker when you select "PHANTOM" for the center mode.*

Note:

When you have selected "PROLOGIC" or "3CHLOGIC," you cannot select the effect level.

Note:

When you have selected "3CHLOGIC" or "THEATER," you cannot adjust the delay time.

4. **Press TEST to start checking the speaker output balance.**
   "TEST" starts flashing on the display, and a test tone comes out of the speakers in the following order:

Left front speaker → Center speaker → Right front speaker → Rear speakers

5. **If necessary, adjust the speaker output balance as follows:**
   - To adjust the rear speaker output level, press REAR (L) +/–.
   - To adjust the center speaker output level, press CENTER +/–.

   Pressing – decreases the output level up to –10 dB.
   Pressing + increases the output level up to +10 dB.

6. **Press TEST again to stop the test tone.**

If you have selected JVC Theater Surround, go to the following steps.

7. **Press EFFECT to adjust the effect level.**
   Each time you press the button, the effect level changes as follows:

EFFECT 1 → EFFECT 2 → EFFECT 3
EFFECT 5 ← EFFECT 4

As the number increases, the effect of the Theater Surround mode becomes stronger.

Notes:

- *No test tone comes out of the rear speakers when you have selected "3CHLOGIC."*
- *No test tone comes out of the center speaker when you select "PHANTOM" for the center mode.*

Notes:

- *The sound level of the left and right rear speakers will be the same.*
- *You cannot set the sound level of the rear speakers when you have selected "3CHLOGIC."*
- *You cannot set the sound level of the center speaker when you select "PHANTOM" for the center mode.*

Note:

When you have selected "PROLOGIC" or "3CHLOGIC," you cannot select the effect level.

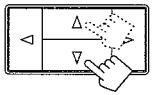
Using Surround Modes

Once you have adjusted the surround mode you can use the same adjustments every time you want to enjoy Surround modes.

From the front panel:

1. **Press SURROUND so that the Control △ / ▽ buttons work for selecting the Surround Processor mode.**
   The lamp above the button lights up.

2. **Press Control △ / ▽ to select one of the Surround mode ("PROLOGIC," "3CHLOGIC" or "THEATER").**
   Each time you press the button, the Surround Processor modes change as follows:



Ex. → PROLOGIC ⟷ THEATER ⟷ 3CHLOGIC →
→ OFF ⟷ 3DACTION* ⟷ PAVILION* →

* As for the 3D-PHONIC modes (see page 27) and the DAP modes (see page 29), one of the previously selected mode appears on the display.

3. **Select and play a sound source which was processed with Dolby Surround and is labeled with DOLBY SURROUND mark.**

To cancel Sur round mode

Select "OFF" in step 2 above.

From the remote control:

1. **Press SOUND CONTROL so that 10 keys work for adjusting the sound.**

2. **Press SURROUND until the mode you want appears on the display.**
   The previous mode is recalled (with its previous settings) and is shown on the display.
   The indicator for that mode also lights up on the display.
   Each time you press the button, the surround modes change as follows:

→ THEATER → 3CHLOGIC → PROLOGIC →
OFF ←

3. **Select and play a sound source which was processed with Dolby Surround and is labeled with DOLBY SURROUND mark.**

To cancel sur round mode

Select "OFF" in step 2 above.

Note:

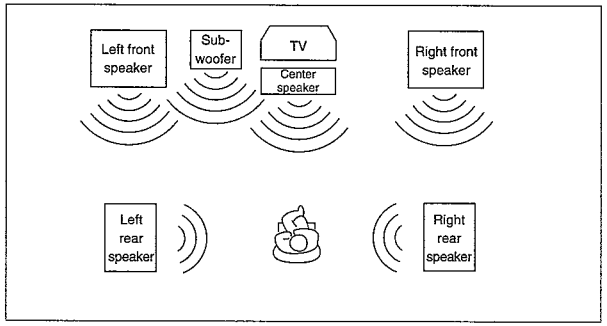
When one of the surround modes is selected, the corresponding indicator lights up on the display.

Using the DVD MULTI Playback Mode

This receiver provides the DVD MULTI playback mode for reproducing the analog discrete output mode (5.1 CH) of the DVD player.
Before playing back a DVD, refer also to the manual supplied with the DVD player.

Speaker arrangements for DVD MULTI playback

The following illustration show how to obtain the optimum sound environment for the DVD MULTI playback mode. Try to find the speaker direction and location to create the optimum sound field.



Note:

You can place the subwoofer anywhere around you.

Activating the DVD MULTI playback

You can adjust the DVD MULTI playback mode while playing back a DVD using the analog discrete output mode on the DVD player.
Once you made adjustments, the receiver memorizes the adjustments until you change them. You also need to set the DVD player to the analog discrete output mode.

On the front panel:

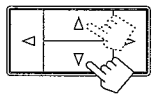
1. **Press DVD MULTI until "DVD MULTI" appears on the display.**

2. **Select the analog discrete output mode on the DVD player, and start playing a DVD.**
   Refer to the manual supplied with the DVD player.

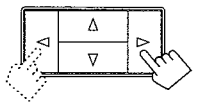
If you want to make any adjustment, go to the following steps.

3. **Press ADJUST so that the Control △ / ▽ / ◁ / ▷ buttons work for adjusting the DVD MULTI playback mode.**
   The lamp above the button lights up.

4. **Press Control △ / ▽ until "–CENTER+" appears on the display.**



5. **Press Control ◁ / ▷ to adjust the center speaker output level.**
   - Pressing Control ◁ decreases the output level up to –10 dB.
   - Pressing Control ▷ increases the output level up to +10 dB.

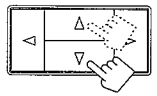


Note:

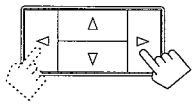
When you select "DVD MULTI" as the source to play, the Surround Processor modes are canceled temporarily.

Using the DVD MULTI Playback Mode

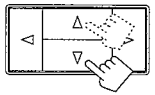
6. **Press Control △ / ▽ until "–REAR L+" appears on the display.**



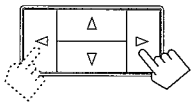
7. **Press Control ◁ / ▷ to adjust the left rear speaker output level.**
   - Pressing Control ◁ decreases the output level up to –10 dB.
   - Pressing Control ▷ increases the output level up to +10 dB.



8. **Press Control △ / ▽ until "–REAR R+" appears on the display.**



9. **Press Control ◁ / ▷ to adjust the right rear speaker output level.**
   - Pressing Control ◁ decreases the output level up to –10 dB.
   - Pressing Control ▷ increases the output level up to +10 dB.



From the remote control:

1. **Press DVD MULTI until "DVD MULTI" appears on the display.**

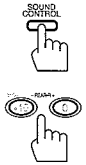
2. **Select the analog discrete output mode on the DVD player, and start playing a DVD.**
   Refer to the manual supplied with the DVD player.

If you want to make any adjustment, go to the following steps.

3. **Press CENTER +/– to adjust the center speaker output level.**
   - Pressing CENTER – decreases the output level up to –10 dB.
   - Pressing CENTER + increases the output level up to +10 dB.

4. **Press REAR (L) +/– to adjust the left rear speaker output level.**
   - Pressing REAR (L) – decreases the output level up to –10 dB.
   - Pressing REAR (L) + increases the output level up to +10 dB.

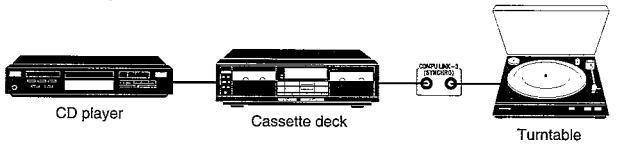
5. **Press SOUND CONTROL, then press REAR•R +/– to adjust the right rear speaker output level.**
   - Pressing REAR•R – decreases the output level up to –10 dB.
   - Pressing REAR•R + increases the output level up to +10 dB.



COMPU LINK Remote Control System

The COMPU LINK remote control system allows you to operate JVC audio components through the remote sensor on the receiver.

To use this remote control system, you need to connect JVC audio components through the COMPU LINK-3 (SYNCHRO) jacks with the cable (monaural mini-plug supplied with those components):



This remote control system allows you to use the four functions listed below.

Remote Control through the Remote Sensor on the Receiver

You can control JVC audio components through the remote sensor on the receiver using this remote control. Aim the remote control directly at the remote sensor on the receiver. For details, see page 43.

Automatic Source Selection

When you press the play (►) button on a connected component or on its own remote control, the receiver automatically turns on and changes the source to the component. On the other hand, if you select a new source on the receiver or the remote control, the selected component begins playing immediately.
In both cases, the previously selected source continues playing without sound for a few seconds.

Automatic Power On/Off (only possible with the COMPU LINK-3 connection)

Both the CD player and cassette deck turn on and off with the receiver.
When you turn on the receiver, the CD player or cassette deck will turn on automatically, depending on which component has been previously selected.
When you turn off the receiver, both the CD player and cassette deck will turn off.

Synchronized Recording

Synchronized recording means the cassette deck starts recording as soon as a CD (or a record) begins playing.

To use synchronized recording, follow these steps:

1 **Put a tape in the cassette deck, and a disc in the CD player (or a record on the turntable).**
2 **Press the record (●) button and the pause (II) button on the cassette deck at the same time.**
   This puts the cassette deck into recording pause.
   If you do not press the record (●) button and pause (II) button at the same time, the synchronized recording will not start.
3 **Press the play (►) button on the CD player (or on the turntable).**
   The source changes on the receiver, and as soon as play starts, the cassette deck starts recording. When the play ends, the cassette deck enters recording pause, and stops about 4 seconds later.

Notes:

- *Without connecting the audio components with RCA pin plugs as described on page 11, the COMPU LINK remote control system cannot operate the components.*
- *Refer also to the manuals supplied with your audio components.*

Notes:

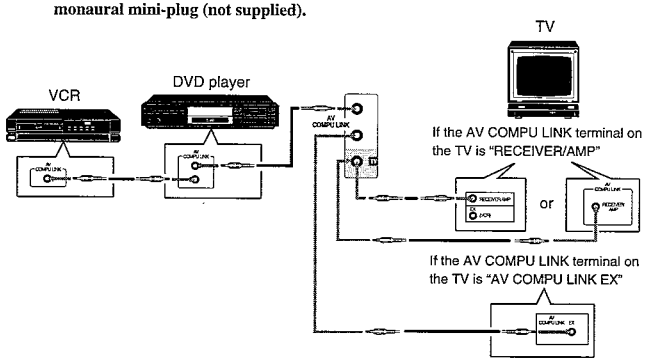
- *During synchronized recording, the selected source cannot be changed.*
- *If your CD player is playing in program mode, a 4-second blank is recorded between tracks so that the music scan feature of your cassette deck can be used on the recorded tape.*
- *If the power of any component is shut off during synchronized recording, the COMPU LINK remote control system may not operate properly. In this case, you must start again from the beginning.*

AV COMPU LINK Remote Control System

The AV COMPU LINK remote control system allows you to operate JVC video components (TV, VCR, and DVD player) through the receiver.

To use this remote control system, you need to connect the video components you want to operate, following the procedures below.

1. **Connect your VCR, DVD player, and TV as follows, using the cables with the monaural mini-plug (not supplied).**


TV
VCR
DVD player
If the AV COMPU LINK terminal on the TV is "RECEIVER/AMP"
or
If the AV COMPU LINK terminal on the TV is "AV COMPU LINK EX"

2. **Connect the VCR, DVD player, and TV using the cables with RCA pin plug, see pages 11 and 12.**

   If you connect the VCR or DVD player to the TV directly using an S-video cable, leave the corresponding video input on this receiver unplugged — VCR IN (PLAY) for the VCR or DVD for the DVD player.

3. **When turning on the TV for the first time after the AV COMPU LINK connection, turn the TV volume to the minimum using the TV volume control on the TV.**

Notes:

- *Without connecting the video components with RCA pin plugs as described on page 11, the AV COMPU LINK remote control system cannot operate the components.*
- *Refer also to the manuals supplied with your video components.*

The AV COMPU LINK remote control system allows you to use the five basic functions listed below.

Remote Control of the TV, DVD player, and VCR Using This Remote Control

See page 44 for details.

For the DVD player and the VCR:

- Aim the remote control directly at **the remote sensor on the each component.**

For the TV having AV COMPU LINK terminal "RECEIVER/AMP":

- Aim the remote control directly at **the remote sensor on the receiver when operating the TV.**

For the TV having AV COMPU LINK terminal "AV COMPU LINK EX":

- Aim the remote control directly at **the remote sensor on the TV when operating the TV.**

One-Touch Video Play

Simply by inserting a video cassette without its safety tab into the VCR, you can activate the video playback without setting other switches manually.
The receiver automatically turns on and changes the source to the VCR.
The TV automatically turns on and changes the input mode to the correct position so that you can view the VCR playback.
When you insert a video cassette with its safety tab, press the play (►) button on the VCR or on the remote control. So, you can get the same result.

One-Touch DVD Play

Simply by starting playback on the DVD player, you can enjoy the DVD playback without setting other switches manually.
The receiver automatically turns on and changes the source to "DVD" or "DVD MULTI"—DVD playback mode is automatically selected when a disc played in stereo, while DVD MULTI playback mode is automatically selected when a disc is played back using the analog discrete output mode on the DVD player or the audio output setting of the DVD player is mixed to two front channels.
The TV automatically turns on and changes the input mode to the position so that you can view the playback picture.

Automatic Selection of TV's Input Mode

- When you select TV SOUND as the source to play through the receiver, the TV automatically changes the input mode to the TV tuner.
  So, you can watch TV, without changing the input mode on the TV.
- When you select "DVD," "DVD MULTI" or "VCR" as the source to play on the receiver, the TV automatically changes the input mode to the correct position (either Video Input 1 or 2) so that you can watch the playback picture.

Automatic Power On/Off

The TV, VCR, and DVD player turn on and off along with the receiver.
When you turn on the receiver;

- If the previously selected source is "VCR," the TV and VCR will turn on automatically.
- If the previously selected source is "TV SOUND," only the TV will turn on automatically.
- If the previously selected source is "DVD" or "DVD MULTI," the TV and DVD player will turn on automatically.

When you turn off the receiver, the TV, VCR, and DVD player will turn off.

Note:

Refer also to the manual supplied with your video components.

Note:

When you start playing a disc of 5.1 ch surround, "DVD MULTI" will be selected though you have previously selected "DVD." You can change it to "DVD" after playback starts.

Note:

If you turn off the receiver while recording on the VCR, the VCR will not turn off, but continue recording.

Operating Other Components

You can operate JVC audio and video components with this receiver's remote control.
To operate these components with the remote control, first select a source with the source buttons on the remote control. Then, operate that source using the remote control.

IMPOR TANT :

To operate JVC audio components using this remote control:

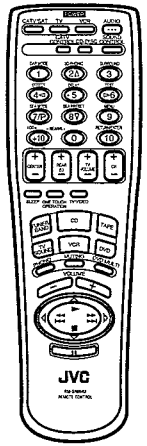
- You need to connect JVC audio components through the COMPU LINK-3 (SYNCHRO) jacks (see page 40) in addition to the connections using cables with RCA pin plugs (see page 11).
- Aim the remote control directly at the remote sensor on the receiver.

Note:

If you choose a source on the front panel, the remote control will not operate that source.

■ **After pressing CD, you can perform the following operations on the CD player:**

►	Starts playing.
I◄◄	Returns to the beginning of the current (or previous) track.
►►I	Skips to the beginning of the next track.
■	Stops playing.
II	Pauses. To resume playing, press ►.
1 – 10, +10	Selects a track number directly. For track number 5, press 5. For track number 15, press +10, then 5. For track number 20, press +10, then 10. For track number 30, press +10, +10, then 10.



■ **After pressing CD-DISC, you can perform the following operations on the CD changer:**

1 – 6, 7/P	Select the number of a disc installed in a CD changer. Then continue to operate the CD player as described above.

For example: To find a track number 11 of disc 4

1. Press CD DISC.
2. Press 4.
3. Press CD.
4. Press +10, then 1.

■ **After pressing TAPE, you can perform the following operations on the cassette deck:**

►	Starts playback.
◄◄	Fast winds a tape from right to left.
►►	Fast winds a tape from left to right.
■	Stops operation.
II	Pauses. To resume playing, press ►.

IMPOR TANT :

To operate JVC video components using this remote control:

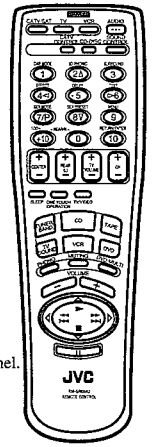
- You need to connect JVC video components through the AV COMPU LINK jacks (see page 41).
- When operating the VCR and DVD player, aim the remote control directly **at the remote sensor on the each component.**
- When operating the TV having AV COMPU LINK "RECEIVER/AMP," aim the remote control directly **at the remote sensor on the receiver.**
- When operating the TV having AV COMPU LINK "AV COMPU LINK EX," aim the remote control directly **at the remote sensor on the TV.**

Note:

If you choose a source on the front panel, the remote control will not operate that source.

■ **After pressing VCR, you can perform the following operations on the VCR:**

►	Starts playback.
◄◄	Rewinds a video tape.
►►	Fast winds a video tape.
■	Stops operation.
II	Pauses. To resume playing, press ►.
CH +/–	Changes the TV channel on the VCR.



You can always do the following on the VCR:

VCR (in the POWER section)	Turn on and off the VCR

■ **After pressing TV SOUND, you can perform the following operations on the TV:**

CH +/–	Changes the channels
1–9, 0, 100+	Selects the channels.
RETURN	Alternates between the previously selected channel and the current channel.

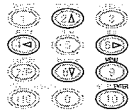
You can always do the following on the TV:

TV VOLUME +/–	Adjust the volume.
TV/VIDEO	Sets the input mode (either TV or VIDEO)
TV (in the POWER section)	Turns on or off the TV

■ **After pressing DVD or DVD MULTI, you can perform the following operations on the DVD player:**

►	Starts playing.
I◄◄	Returns to the beginning of the current (or previous) track. (When pressed briefly.)
►►I	Skips to the beginning of the next track. (When pressed briefly.)
◄◄	Fast reverse a disc. (When pressed and held.)
►►	Fast foward a disc. (When pressed and held.)
■	Stops playing.
II	Pauses. To resume playing, press ►.

After pressing DVD or DVD MULTI, these buttons can be used for the DVD menu operations.



Note:

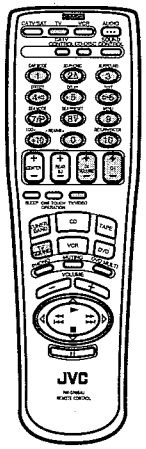
For detailed menu operations, refer to the instructions supplied with the discs and the DVD player.

Operating Other Manufacturers Video Equipment

This remote control supplied with the receiver can transmit control signals for other manufacturers' VCRs, TVs, CATV converters and satellite tuners. By changing the transmittable signals from preset ones to the other manufacturers', you can operate the other manufacturer's components using this remote control.

When operating the other manufacturers' components, refer also to the manuals supplied with them. To operate these components with the remote control, first you need to set the manufacturer's code each for VCR, TV, CATV converters, and satellite tuner.

To change the transmittable signals for operating another manufacturers TV



1. **Press and hold TV (in the POWER section).**
2. **Press TV SOUND.**
3. **Enter manufacturer's code (two digits) using buttons 1–9, and 0.**
   See the list below to find the code.
4. **Release TV in the POWER section.**
   The following buttons can be used for operating the TV:

TV (in the POWER section)	Turns on and off the TV.
TV VOLUME +/–	Adjusts the volume.
TV/VIDEO	Sets the input mode (either TV or VIDEO).

After pressing TV SOUND, you can perform the following operations on the TV:

CH +/–	Changes the channels.
1 – 9, 0, 100+ (+10)	Selects the TV channels. 100+ (+10) button will function as the ENTER button if your TV requires pressing ENTER after selecting a channel number.
RETURN	Alternates between the previously selected channel and the current channel.

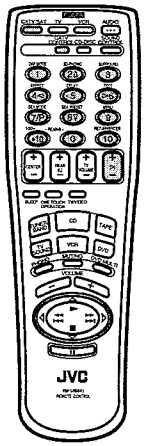
5. **Try to operate your TV by pressing TV in the POWER section.**
   When your TV turns on or off, you have entered the correct code.
   If there are more than one code listed for your brand of TV, try each one until the correct one is entered.

Manufacturer	Code	Manufacturer	Code
HITACHI	10	SAMSUNG	12
JVC	01	SANYO	13
MAGNAVOX	02	SHARP	06
MITSUBISHI	03	SONY	07
PANASONIC	04, 11	TOSHIBA	08
RCA	05	ZENITH	09

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Note:
Refer to the manual supplied with your TV.

To change the transmittable signals for operating a CATV converter or satellite tuner



1. **Press and hold CATV/SAT (in the POWER section).**
2. **Press CATV CONTROL.**
3. **Enter manufacturer's code (two digits) using buttons 1–9, and 0.**
   See the list below to find the code.
4. **Release CATV/SAT (in the POWER section).**
   Following button can be used for operating the CATV converter or the satellite tuner:

CATV/SAT (in the POWER section)	Turns on and off the CATV converter or satellite tuner.

After pressing CATV CONTROL, you can perform the following operations on the equipment:

CH +/–	Changes the channels.
1 – 9, 0, 100+ (+10)	Selects the channel. 100+ (+10) button will function as the ENTER button if your equipment requires pressing ENTER after selecting a channel number.
RETURN	Alternates between previously selected channel and the current channel.

5. **Try to operate your CATV converter or satellite tuner by pressing CATV/SAT (in the POWER section).**
   When your CATV converter or satellite tuner turns on or off, you have entered the correct code.
   If there are more than one code listed for your brand of CATV converter or satellite tuner, try each one until the correct one is entered.

Manufacturer	Codes
GI JERROLD	01, 02, 03, 04, 05, 06, 07, 08
HAMLIN/REGAL	15, 16, 17, 18
PIONEER	13, 14
SCIENTIFIC ATRANTA	09, 10
ZENITH	11, 12
RCA	19
SONY	20

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Note:
Refer to the manual supplied with your CATV converter or satellite tuner.

Operating Other Manufacturers Video Equipment

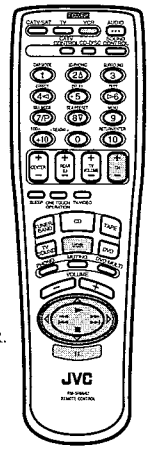
To change the transmittable signals for operating another manufacturers VCR

1. **Press and hold VCR (in the POWER section).**
2. **Press VCR.**
3. **Enter manufacturer's code (two digits) using buttons 1–9, and 0.**
   See the list below to find the code.
4. **Release VCR (in the POWER section).**
   Following button can be used for operating the VCR:

   VCR (in the POWER section) Turns on and off the VCR.

   After pressing VCR, you can perform the following operations on the VCR:

   CH +/– Changes the TV channels on the VCR.
   ► Starts playback.
   ◄◄ Rewinds a video tape.
   ►► Fast winds a video tape.
   ■ Stops operation.
   II Pauses. To resume playing, press ►.



5. **Try to operate your VCR by pressing VCR POWER.**
   When your VCR turns on or off, you have entered the correct code.
   If there are more than one code listed for your brand of VCR, try each one until the correct one is entered.

Manufacturer	Codes	Manufacturer	Codes
EMERSON	11, 26	PHILIPS	09
FISHER	29	RCA	05, 06
FUNAI	10, 14, 15, 16	SAMSUNG	24
GOLD STAR	12	SANYO	21, 22, 23
HITACHI	04	SHARP	27, 28
JVC	01, 02, 03	SONY	18, 19, 20
MITSUBISHI	13	SHINTOM	30
NEC	25	ZENITH	08
PANASONIC	07, 17		

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Note:

Refer to the manual supplied with your VCR.

Troubleshooting

Use this chart to help you solve daily operational problems. If there is any problem you cannot solve, contact your JVC service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The display does not light up.	The power cord is not plugged in.	Plug the power cord into an AC outlet.
No sound from speakers.	Speaker signal cables are not connected.	Check speaker wiring and reconnect if necessary.
	The SPEAKERS 1 and 2 buttons are not set correctly.	Press SPEAKERS 1 and 2 to set it in the ▬ ON position.
	An incorrect source is selected.	Select the correct source.
"OVERLOAD" starts flashing on the display.	Speakers are over-loaded because of high volume.	Rotate the MASTER VOLUME control counterclockwise three or four times then press POWER on the front panel. If "OVERLOAD" does not disappear, unplug the AC power cord, then plug it back again. Do not use the remote control when "OVERLOAD" is shown on the display.
	Speakers are over-loaded because of short circuit of speaker terminals.	Press POWER on the front panel then check the speaker wiring. If "OVERLOAD" does not disappear, unplug the AC power cord, then plug it back again. Do not use the remote control when "OVERLOAD" is shown on the display. If speaker wiring is not short circuited, contact your dealer.
Sound from one speaker only.	Speaker signal cables are not connected properly.	Check speaker wiring and reconnect if necessary.
	The balance is set to one extreme.	Adjust the balance properly (see page 17).
Continuous hiss or buzzing during FM reception.	Incoming signal is too weak.	Connect an outside FM antenna or contact your dealer.
	The station is too far away.	Select a new station
	An incorrect antenna is used.	Check with your dealer to be sure you have the correct antenna.
	Antennas are not connected properly.	Check connections.
Occasional cracking noise during FM reception.	Ignition noise from automobiles.	Move the antenna farther from automobile traffic.
The analog discrete output sound of the DVD player cannot be reproduced correctly.	An incorrect source is selected.	Select "DVDMULTI" as the source on the receiver.
	The sound setting of the DVD player is incorrect.	Check the sound setting of the DVD player.
Howling during record playing.	Your turntable is too close to speakers.	Move speakers away from the turntable.
Remote control does not work.	There is an obstruction in front of the remote sensor on the receiver.	Remove the obstruction.
	Batteries are weak.	Replace batteries.

Specifications

Output Power At Stereo operation ***100 watts per channel, min. RMS, driven into 8 ohms, 40 Hz to 20 kHz with no more than 0.8 % total harmonic distortion.***

Amplifier

Output Power	At Surround operation		
	Front channels		100 watts per channel, min. RMS, driven into 8 ohms at 1 kHz, with no more than 0.8% total harmonic distortion.
	Center channel		100 watts, min. RMS, driven into 8 ohms at 1 kHz, with no more than 0.8 % total harmonic distortion.
	Rear channels		100 watts per channel, min. RMS, driven into 8 ohms at 1kHz, with no more than 0.8 % total harmonic distortion.
Total Harmonic Distortion (8 ohms, 1 kHz)			0.8 %* at 100 watts output (* Measured by JVC Audio Analysis System)
Frequency Response (8 ohms)	PHONO (MM)		20 Hz to 20 kHz (±1 dB)
	CD, TAPE, TV SOUND, VCR, DVD		20 Hz to 20 kHz (±1 dB)
Audio Input Sensitivity/Impedance (1 kHz)	PHONO		2.7 mV/47 k ohms
	CD, TAPE, TV SOUND, VCR, DVD		220 mV/47 k ohms
Audio Output Level	TAPE, VCR		220 mV
Signal-to-Noise Ratio ('66 IHF/'78 IHF)	PHONO		70 dB/78 dB
	CD, TAPE, TV SOUND, VCR, DVD		87 dB/80 dB
Loudness control (Volume Control at –40 dB)			+5 ±2 dB at 100 Hz
Video Input Sensitivity/Impedance	VCR, DVD		1 Vp-p/75 ohms
Video Output Level	VCR, MONITOR OUT		1 Vp-p (at 1 Vp-p input), sync negative
Signal-to-Noise Ratio			45 dB

FM tuner (IHF)

Tuning Range			87.5 MHz to 108.0 MHz
Usable Sensitivity			10.8 dBf (0.95 µV/75 ohms)
50 dB Quieting Sensitivity	Monaural		16.3 dBf (1.8 µV/75 ohms)
	Stereo		38.3 dBf (22.5 µV/75 ohms)
Signal-to-Noise Ratio (IHF-A weighted)	Monaural		80 dB at 85 dBf
	Stereo		73 dB at 85 dBf
Total Harmonic Distortion	Monaural		0.15 % at 1 kHz
	Stereo		0.2 % at 1 kHz
Stereo Separation at REC OUT			40 dB at 1 kHz
Capture Ratio			1.5 dB (10 mV)
Alternate Channel Selectivity			60 dB: (±400 kHz)
Frequency Response			30 Hz to 15 kHz: (+0.5 dB, –3 dB)

AM tuner

Tuning Range			530 kHz to 1,710 kHz
Usable Sensitivity	Loop antenna		300 µV/m
	External antenna		30 µV
Signal-to-Noise Ratio			50 dB (100 mV/m)

General

Power Requirements			AC 120 V~, 60 Hz
Power Consumption			330 watts/440 VA 5 watts (in standby mode)
Dimensions (W x H x D)			17 3/16 x 5 3/4 x 15 7/8 inches (435 x 146 x 403 mm)
Mass			20.7 lbs (9.4 kg)

Design & specifications are subject to change without notice.

QUALITY JVC SERVICE

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE : 1-800-537-5722

Dear customer:
In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, Call 1-800-537—5722 for your authorized servicer. Remember to retain you Bill of Sale for Warranty Service.

—JVC

JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF US JVC CORP.

FACTORY SERVICE CENTER LOCATIONS

107 Little Falls Road
Fairfield, NJ 07004-2105
(201) 808-9279

1500 Lakes Parkway
Lawrenceville, GA 30243-5357
(404) 339-2522

705 Enterprise Street
Aurora, IL 60504-8149
(708) 851-7855

5665 Corporate Avenue
Cypress, CA 90630-0024
(714) 229-8011

2969 Mapunapuna Place
Honolulu, HI 96819-2040
(808) 833-5828

10700 Hammerly, Suite 110
Houston, TX 77043
(713) 935-9331

230 Eliot Street
Ashland, MA 0172-2377
(508) 881-5923

14505 Commerce Way
Miami Lakes, FL 33016-1512
(305) 362-6252

890 Dubuque Avenue
South San Francisco, CA 94080-1804
(415) 871-2666

Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level of performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.

NATIONAL HEADQUARTERS
JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF US JVC CORP.
107 Little Falls Road
Fairfield, NJ 07004-2105

If you ship the product • • •

Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.

Don't service it yourself.

CAUTION

To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.
Refer servicing to qualified service personnel.

ACCESSORIES

To purchase accessories for your JVC product, you may contact your local JVC Dealer.
Or from the 48 Continental United States call toll free : 800-882-2345

(0694)

JVC LIMITED WARRANTY AUDIO-2

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIAL AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period.")

PARTS	LABOR
2 YRS	2 YRS

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY(50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:
If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:
Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800)537-5722.
If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus and letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.
If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:
This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus(Needle) are covered for 90 days from the date of purchase;
7. Accessories;
8. Batteries (except the Rechargeable Batteries are covered for 90 days from the date of purchase);

There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MARCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty last, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA
DIVISION OF US JVC CORP.
41 Slater Drive
Elmwood Park, New Jersey 07407

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:

Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

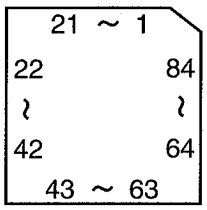
Model No.: _____ Serial No.: _____

Purchase date: _____ Name of dealer: _____

Description of major ICs

■MN173222JABN1(IC401):System Control Micon

1.Trminal Layout



2.Key Matrix

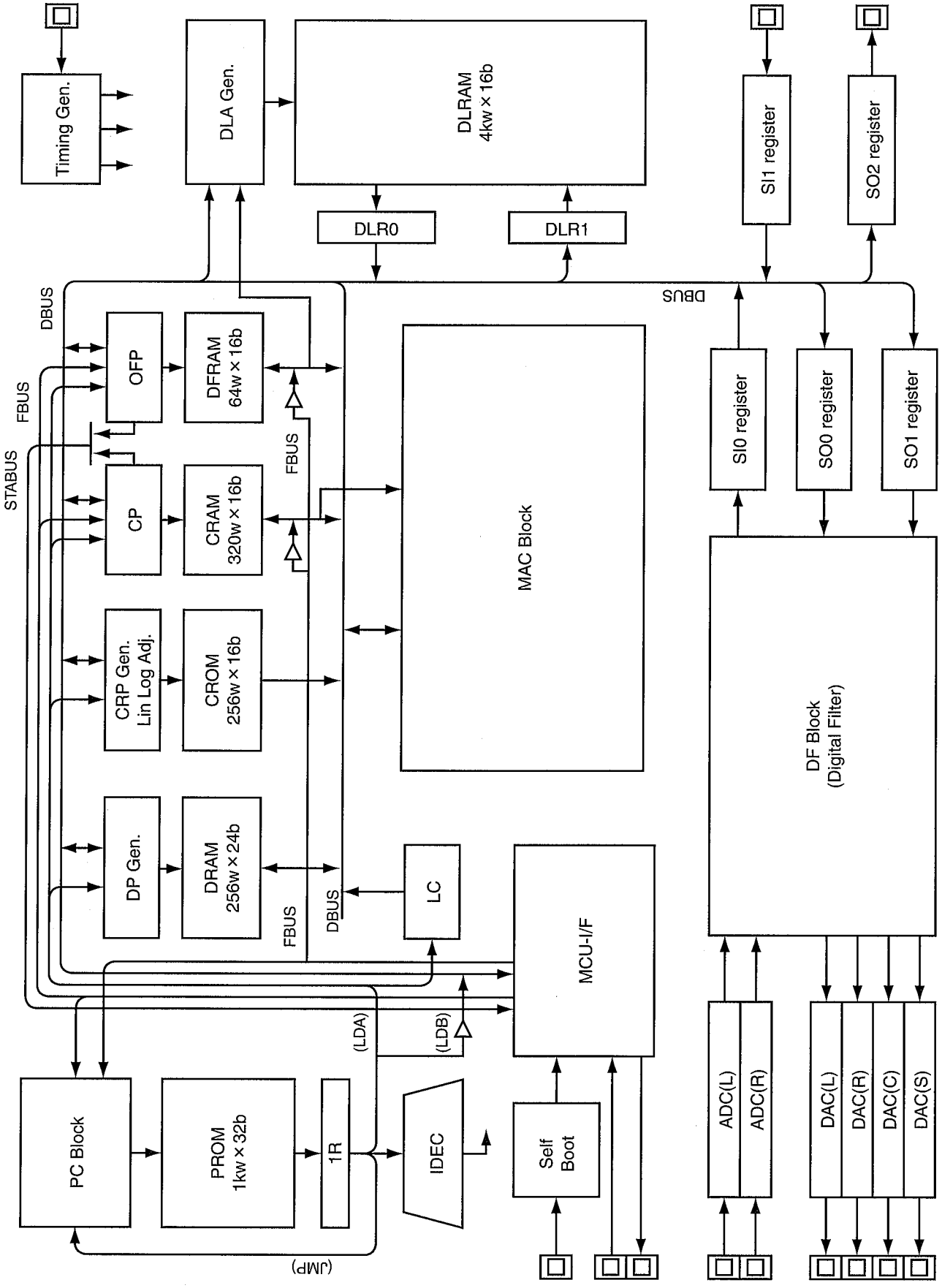
	KEY IN 0	KEY IN 1	KEY IN 2	KEY IN 3
KEY OUT 0	POWER S401	DVD MULTI S419	———	———
KEY OUT 1	SURROUND S402	PRESET SEA S403	TUNER/BAND S404	SETTING S405
KEY OUT 2	SOURCE S406	ADJUST S407	ONE TOUCH OPERATION S408	MEMORY S409
KEY OUT 3	◁ S410	▷ S411	△ S412	▽ S413

3.Pin Function

Pin No.	Synbol	I/O	Function	Pin No.	Synbol	I/O	Function
1	IN1	I	JOG VOLUME control	52	CE	O	Chip enable to IC121
2	IN2	I	JOG VOLUME control	53	CK	O	Clock signal to IC121
3	VIDEO1	O	Video select signal	54	DI	I	Data signal from IC121
4	VIDEO2	O	Video select signal	55	DO	O	Data signal to IC121
5	PROTECT	I	Protector signal input	56	DCSI	I	COMPULINK signal input
6	POWER	O	Power ON/OFF control	57	DCSO	O	COMPULINK signal output
7	KI0	I	Key matrix input	58	DSP ERR	I	Control signal from IC601
8	KI1	I	Key matrix input	59	DSP IFOK	I	Control siganl from IC601
9	KI2	I	Key matrix input	60	DSP ACK	I	Control signal from IC601
10	KI3	I	Key matrix input	61	DSP CS	O	Control siganl to IC601
11	VCR S/C	I	VCR S/C serect signal input	62	T.MUTE	O	Tuner mute signal output
12	G11	O	Grid control signal output	63	S.MUTE	O	Source muting control
13	G10	O	Grid control signal output	64	TV CONT	O	AV compulink control output
14	G9	O	Grid control signal output	65	TV OUT	O	AV compulink output
15	G8	O	Grid control & Key matrix output	66	VCR OUT	O	AV compulink output
16	G7	O	Grid control & Key matrix output	67	VCR IN	I	AV compulink input
17	G6	O	Grid control & Key matrix output	68	RESET IN	I	Reset signal input
18	G5	O	Grid control & Key matrix output	69	X1	-	Connect to GND
19	G4	O	Grid control signal output	70	X2	-	Non connect
20	G3	O	Grid control & Key matrix output	71	Vss	-	Connect to GND
21	G2	O	Grid control & Key matrix output	72	OSC2	-	Oscillation terminal
22	G1/KO7	O	Grid control & Key matrix output	73	OSC1	-	Oscillation terminal
23	Vpp	-	Power supply for FL display	74	VDD	-	Power supply
24~39	S1~S16	O	Segment control signal output	75	SET.I	O	SETTING indication control
40	DVD S/C	I	DVD S/C select signal input	76	ADJ.I	O	ADJUST indication control
41	CLK.D	O	Clock signal to IC601	77	SURR.I	O	SURROUND indication control
42	DATA OUT	O	Data signal to IC601	78	SOURCE.I	O	SOURCE indication control
43	DATA IN	I	Data signal from IC601	79	SEA.I	O	S.E.A. indication control
44	INH	I	Inhibit signal input	80	BAND.I	O	TUNER/BANDindication contorl
45	RDS CLK	-	Non connect	81	STB	O	Strobe signal to
46	RDS DATA	-	Non connect				IC341~343.252.321.322
47	NC	-	Non connect	82	DATA	O	Data signal to
48	RM	I	Remocon signal from IC402				IC341~343.252.321.322.404
49	D-START	-	Non connect	83	CLK	O	Clock signal to
50	STEREO	I	Stereo signal input				IC341~343.252.321.322.404
51	TUNED	I	Tuning signal input	84	STB(EX)	O	Strobe signal to IC404

■TC9471F(IC601):Dolby Prologic

1.Block Diagram



2-a.Pin Function

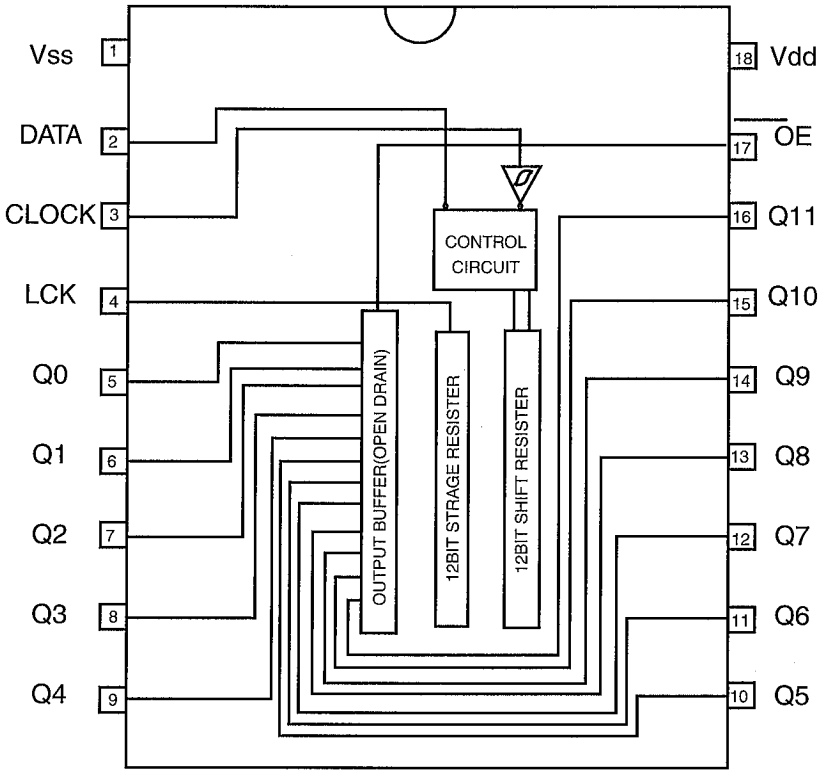
Pin No.	Symbol	I/O	Function
1	ECKO	O	Amplifier output terminal for external clock input.
2	ECKI	I	Amplifier input terminal for external clock input.
3	GNDX	-	Ground terminal.(For crystal oscillator circuit)
4	GNDAL	-	Ground terminal.(For DAC L channel)
5	AOL	O	DAC analog signal output terminal.(L channel)
6	VRL	-	Reference voltage terminal.(For DAC L channel)
7	VDAL	-	Power supply terminal.(For DAC L channel)
8	VDAR	-	Power supply terminal.(For DAC R channel)
9	VRR	-	Reference voltage terminal.(For DAC R channel)
10	AOR	O	DAC analog signal output terminal.(R channel)
11	GNDAR	-	Ground terminal.(For DAC R channel)
12	GNDAC	-	Ground terminal.(For DAC C channel)
13	AOC	O	DAC analog signal output terminal.(C channel)
14	AOCT	O	DAC analog signal output terminal with attenuator.(For C channel)
15	VRC	-	Reference voltage terminal.(For DAC C channel)
16	VDAC	-	Power supply terminal.(For DAC C channel)
17	VRO	O	Reference voltage terminal for attenuator.(Output buffer)
18	VRI	I	Reference voltage terminal for attenuator.(Input buffer)
19	VDAS	-	Power supply terminal.(For DAC S channel)
20	VRS	-	Reference voltage terminal.(For DAC S channel)
21	AOST	O	DAC analog signal output terminal with attenuator.(For S channel)
22	AOS	O	DAC analog signal output terminal.(S channel)
23	GNDAS	-	Ground terminal.(For DAC S channel)
24	GND	-	Ground terminal.
25~29	TP0~4	O	Test data output terminal, normally open.
30	VDD	-	Power supply terminal.
31	VDDR	-	Power supply terminal.(For DLRAM)
32	GNDR	-	Ground terminal.(For DLRAM)
33~40	TP5~12	O	Test data output terminal,normally open.
41	FS	O	Clock output terminal.(1fs)
42	CKO0	O	Clock output terminal 0.
43	CKO1	O	Clock output terminal 1.
44	GND	-	Ground terminal.
45	TP13	O	Test data output terminal,normally open.
46	MCK	O	Master clock output terminal.(256fs/512fs/(384/768fs))
47	VDD	-	Power supply terminal.
48~53	TP14~19	O	Test data output terminal,normally open.
54	CKS	I	Master clock select terminal.
55	STEP0	I	Operation step select terminal 0.
56	STEP1	I	Operation step select terminal 1.
57	RST	I	Reset signal input terminal.

2-b.Pin Function

Pin No.	Symbol	I/O	Function
58	VDD	-	Power supply terminal
59	SYNC	I	Synchronous signal input terminal.
60	ELRO	I	LR clock input terminal for serial data output.
61	ELRI	I	LR clock input terminal for serial data input.
62	EBCO	I	Bit clock input terminal for serial data output.
63	EBCI	I	Bit clock input terminal for serial data input.
64	DIN	I	Serial data input terminal.
65	DOUT	O	Serial data output terminal.
66	EM0	I	De-emphasis select terminal 0.
67	EM1	I	De-emphasis select terminal 1.
68	IFF0	I	Interface flag terminal 0.
69	IFF1	I	Interface flag terminal 1.
70	IFF2	I	Interface flag terminal 2.
71	GND	-	Ground terminal.
72	CS	I	Chip select signal input terminal.(MCU interface)
73	IFCK	I	Data sift clock input terminal.(MCU interface)
74	IFDI	I/O	Data input terminal.(MCU interface) At the IC bus mode,data input /output terminal.
75	IFDO	O	Data output terminal.(MCU interface) At the IC bus mode,normally open.
76	IFOK	O	Operation flag output terminal.(MCU interface)
77	ACK	O	Acknowledge signal output terminal.(MCU interface)
78	ERR	O	Error flag output terminal.(MCU interface)
79	I2CS	I	IC bus mode select terminal.
80	BOOT	I	Self-boot control terminal.
81	BA0	I	Boot address select terminal 0.
82	BA1	I	Boot address select terminal 1.
83	VDD	-	Power supply terminal.
84~87	TST0~3	I	Test data input terminal,normally fixed"L"level
88	GND	-	Ground terminal.
89	VSAL	-	Analog ground terminal.(For ADC L channel)
90	LIN	I	ADC analog signal input terminal.(L channel)
91	AVRL	-	Reference voltage terminal.(For ADC L channel)
92	VDL	-	Analog power supply terminal.(For ADC L channel)
93	VDR	-	Analog power supply terminal.(For ADC R channel)
94	AVRR	-	Reference voltage terminal.(For ADC R channel)
95	RIN	I	ADC analog signal input terminal.(R channel)
96	VSAR	-	Analog ground terminal.(For ADC R channel)
97	GNDX	-	Ground terminal.(For crystal oscillator circuit)
98	XI	I	Crystal oscillator connection terminal.(input)
99	XO	O	Crystal oscillator connection terminal.(output)
100	VDX	-	Power supply terminal.(For crystal oscillator circuit)

■BU2092(IC404):PORT EXPANDER

1.Terminal Layout

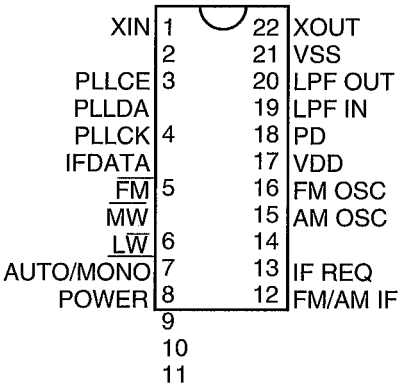


2.Pin Function

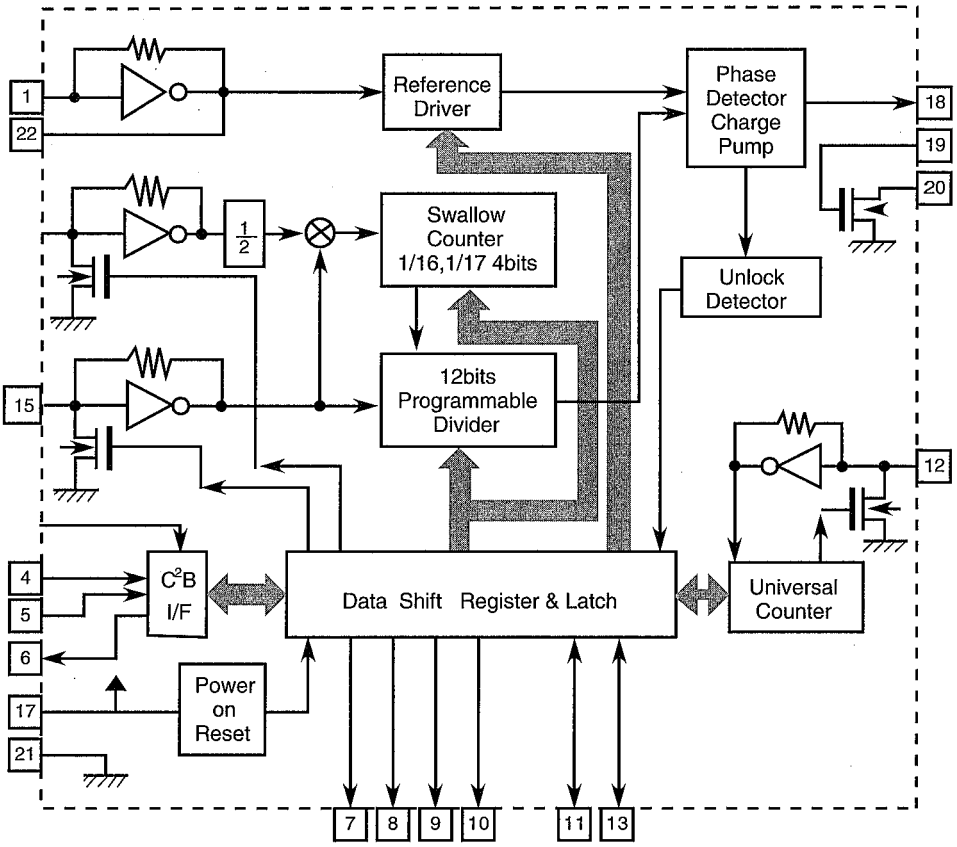
Pin No.	Symbol	I/O	Function
1	Vss	-	Connect to GND
2	DATA	I	Serial Data input
3	CLOCK	I	Shift Clock of Data
4	LCK	I	Latch Clock of Data
5~16	Q0~Q11	O	Parallel Data Output Latch Data: L / H OUTPUT: ON / OFF
17	$\overline{OE}$	I	Output Enable
18	Vdd	-	Power Supply

■LC72131(IC121):PLL Synthesizer

1. Terminal Layout



2. Block Diagram

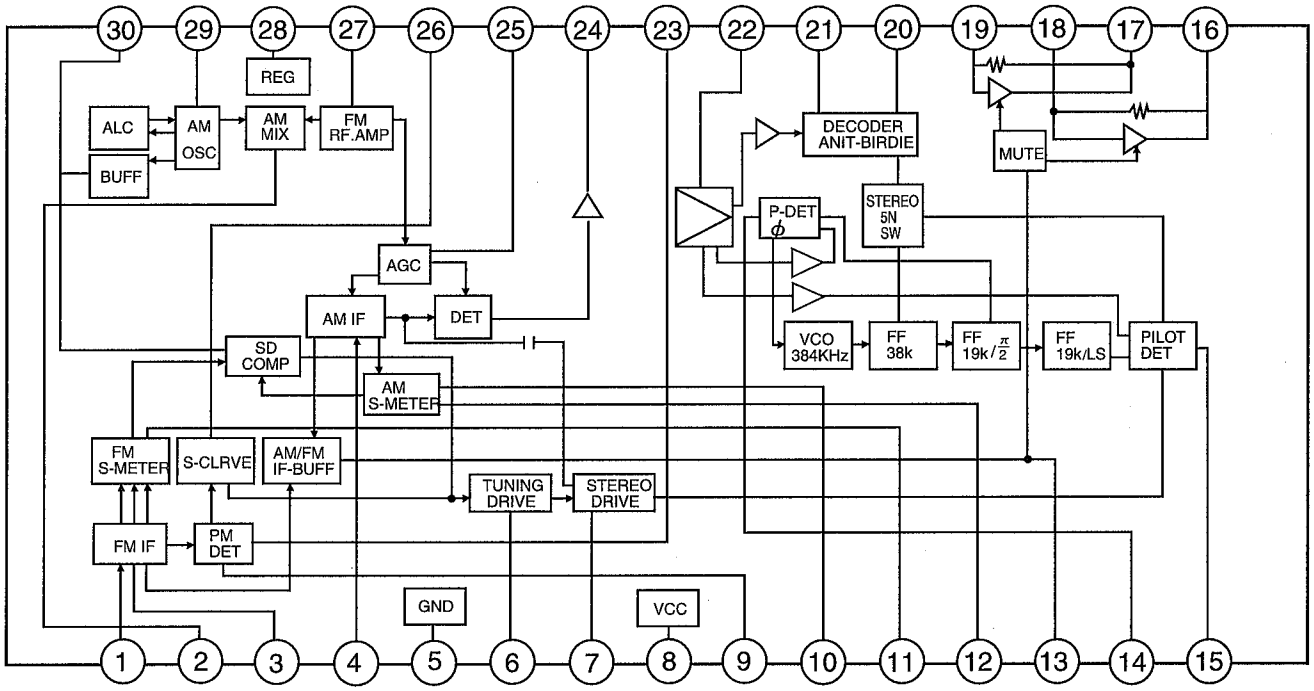


3.Pin Functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	Xin	I	Crystal oscillator (7.2MHz).	12	FM/AM IF	I	Universal counter input
2		--	Not nse	13	IF REQ	O	Output the "IF-signal request" to IC102
3	PLLCE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data	14		I	Not use
4	PLLDA	I	Receive the control data from the controller (IC801).	15	AMOSC		Input the local oscillator signal of AM.
5	PLLCK	I	This clock is used to synchronize data when transmitting the data of DI and DO.	16	FM OSC	I	Input the local oscillator signal of FM.
6	IFDATA	O	Transmit the data from LC72131 to the controller which is synchronized with CK.	17	VDD	O	This is a terminal of power supply.
7	$\overline{FM}$	O	It is "L" on FM mode.	18	PD	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output.When it is same as reference frequency signals, it will be floating.
8	$\overline{MW}$	O	It is "L" on MW mode.	19	LPF IN	I	Transistor used for the PLL active low-pass filterr
9	$\overline{LW}$	O	It is "L" on LW mode.	20	LPF OUT	O	Transistor used for the PLL active low-pass filterr
10	AUTO $\overline{MONO}$	O	It is "L" on monaural, "L" on auto	21	VSS	--	Connected toGND
11	POWER	O	Regulator control signal P ON "H" , STANDBY "L"	22	X out	O	Crystal oscillator(7.2MHz).

■ LA1837(IC102): FM AM IF AMP&detector, FM MPX Decorder

1. Block Diagram

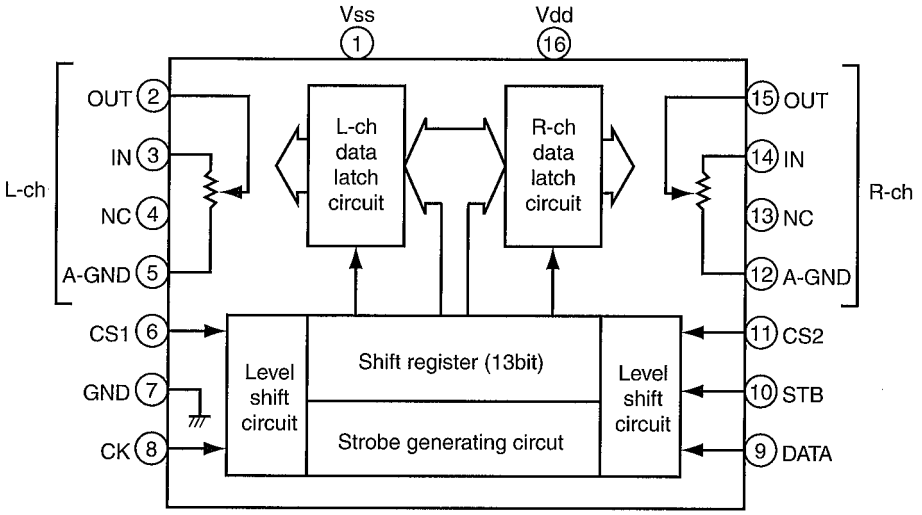


3. Pin Function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF signal.	16	L OUT	O	Left channel signal output.
2	AM MIX	O	This is an out put terminal for AM mixer.	17	R OUT	O	Right channel signal output.
3	FM IF	I	Bypass of FM IF	18	L IN	I	Input terminal of the Left channel post AMP.
4	AM IF	I	Input of AM IF Signal.	19	R IN	I	Input terminal of the Right channel post AMP.
5	GND	—	This is the device ground terminal.	20	RO	O	Mpx Right channel signal output.
6	TUNED	O	When the set is tunning,this terminal becomes "L".	21	LO	O	Mpx Left channel signal output.
7	STEREO	O	Stereo indicator output. Stereo "L", Mono: "H"	22	IF IN	I	Mpx input terminal
8	VCC	—	This is the power supply terminal.	23	FM OUT	O	FM detection output.
9	FM DET	—	FM detect transformer.	24	AM DET	O	AM detection output.
10	AM SD	—	This is a terminal of AM ceramic filter.	25	AM AGC	I	This is an AGC voltage input terminal for AM
11	FM VSM	O	Adjust FM SD sensitivity.	26	AFC	—	This is an output terminal of voltage for FM-AFC.
12	AM VSM	O	Adjust AM SD sensitivity.	27	AM RF	I	AM RF signal input.
13	MUTE	I/O	When the signal of IF REQ of IC121(LC72131) appear, the signal of FM/AM IF output. //Muting control input.	28	REG	O	Register value between pin 26 and pin28 desides the frequency width of the input signal.
14	FM/AM	I	Change over the FM/AM input. "H" :FM, "L" : AM	29	AM OSC	—	This is a terminal of AM Local oscillation circuit.
15	MONO/ST	O	Stereo : "H", Mono: "L"	30	OSC BUFFER	O	AM Local oscillation Signal output.

■TC9413AP(IC343,IC342):Rear/Center/Sub.W Volume Control

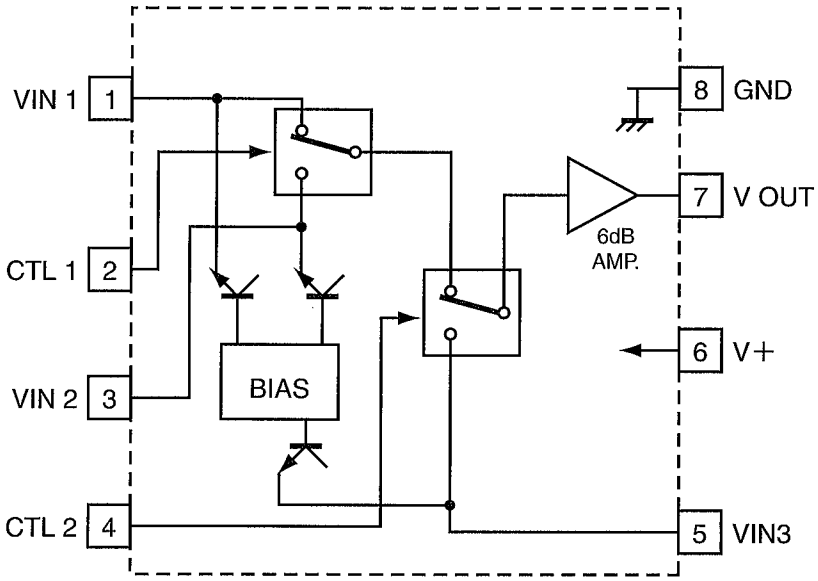
1.Block Diagram



2.Description

Pin No.	Synbol	I/O	Function
1	Vss	-	Negative Power supply
2	L-OUT	O	L-ch Volume output
3	L-IN	I	L-ch Volume input
4	NC	-	Non connect
5	L-A-GND	-	Analog GND
6	CS1	I	Chip select input
7	GND	-	Digital GND
8	CK	I	Data transfer clock input
9	DATA	I	Volume setup serial data input
10	STB	I	Data write strobe input
11	CS2	I	Chip select input
12	R-A-GND	-	Analog GND
13	NC	-	Non connect
14	R-IN	I	R-ch Volume input
15	R-OUT	O	R-ch Volume output
16	Vdd	-	Positive power supply

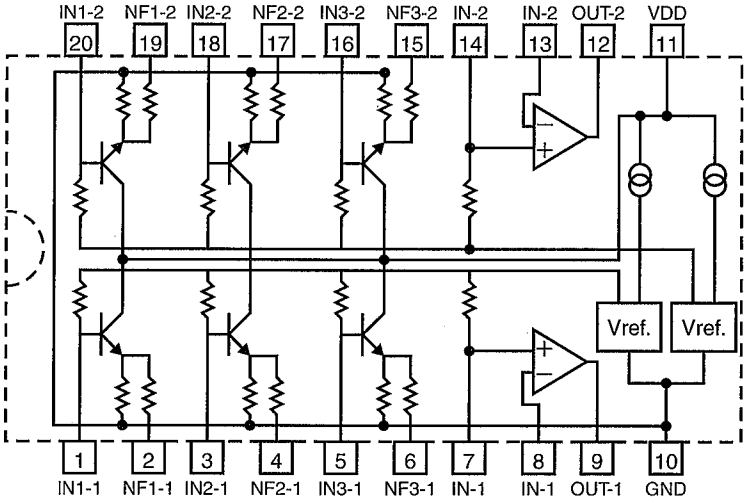
■NJM2246D(IC201):Video Switch



Control Signal - Output Signal

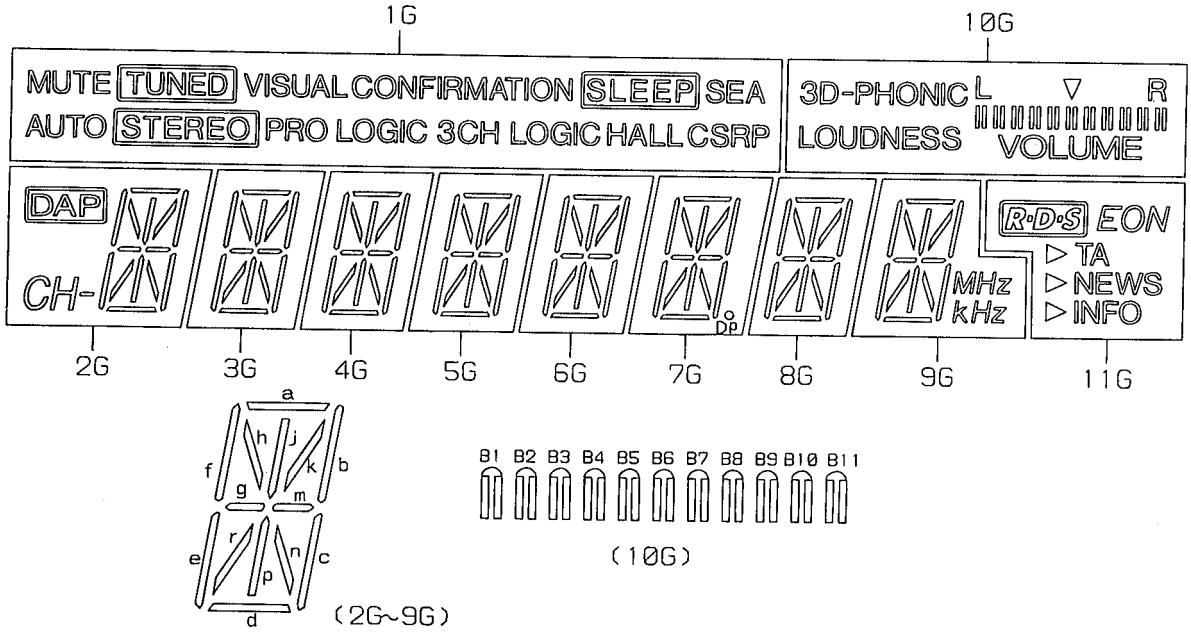
CTL 1	CTL 2	Output
L	L	VIN 1
H	L	VIN 2
L/H	H	VIN 3

■M5243P12(IC251):S.E.A. Graphic Equalizer



Internal Connections for FL Display Tube

■QLF0002-001(DI401):FL DISPLAY TUBE



ANODE CONNECTION

	1G	2G	3G~6G	7G	8G	9G	10G	11G
P1	MUTE AUTO	a	a	a	a	a	B1	R·D·S
P2	TUNED	b	b	b	b	b	B2	EON
P3	STEREO	j	j	j	j	j	B3	▷TA
P4	VISUAL CONFIRMATION	k	k	k	k	k	B4	▷NEWS
P5	SLEEP	h	h	h	h	h	B5	▷INFO
P6	CSRP	f	f	f	f	f	B6	-
P7	-	m	m	m	m	m	B7	-
P8	-	g	g	g	g	g	B8	-
P9	HALL	c	c	c	c	c	B9	-
P10	3CH LOGIC	n	n	n	n	n	B10	-
P11	-	r	r	r	r	r	B11	-
P12	-	p	p	p	p	p	LOUDNESS	-
P13	PRO LOGIC	e	e	e	e	e	VOLUME	-
P14	-	d	d	d	d	d	L R	-
P15	SEA	CH-	-	Dp	-	MHz	3D-PHONIC	-
P16	-	DAP	-	-	-	kHz	▽	-

PIN CONNECTION

PIN NO.	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NP	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	F1	F1

NOTE 1) F1,F2 --- Filament
2) NP ------ No Pin
3) NC ------ No connection
4) DL ------ Datum Line
5) 1G~11G --- Grid

Disassembly Procedures

(1)Top cover removal

1.Remove 4 screws A on both sides of the top cover and 3 screws B on the rear side. (Fig.1)
2.Lift the back of the top cover spreading both sides to remove.

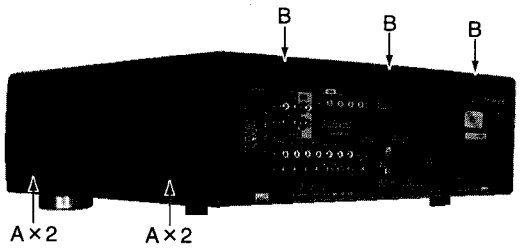


Fig.1

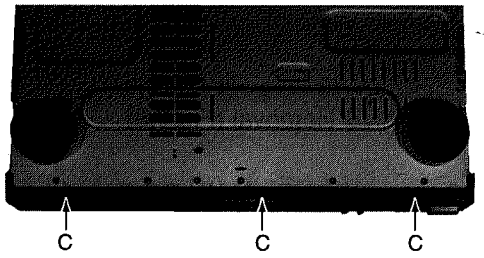


Fig.2

(2)Front panel assembly removal

1.Remove the top cover.
2.Remove 3 screws C on the bottom side and 3 screws D on the top side.(Fig.2,3)
3.Disconnect the wire CN811 on the MAIN P.C.Board. (Fig.7)
4.Disconnect the wire CN304 on the INPUT P.C.Board. (Fig.7)
5.Remove the front panel assembly.

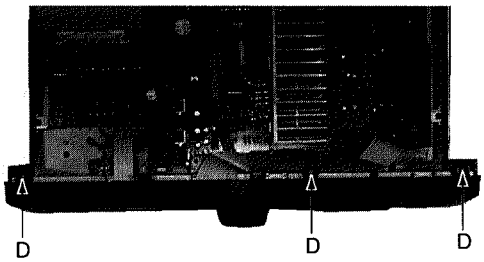


Fig.3

(3)Rear panel remove

1.Remove the top cover.
2.Remove 19 screws E and 2 screws F (Fig.4)
3.Remove the power cord stopper up side.
4.Remove the rear panel.

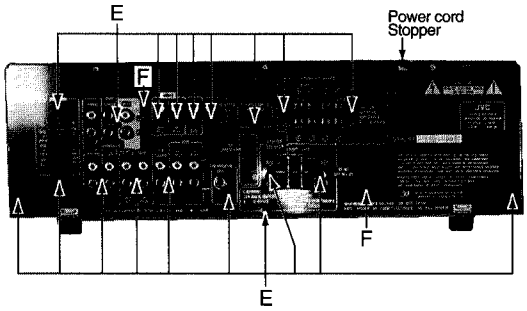


Fig.4

(4)Remove TUNER P.C.Board

Disconnect the connector CN111 on the INPUT P.C.Board.(Fig.5)

(5)Remove VIDEO P.C.Board (Fig.5)

1.Remove 1 screw G on the VIDEO P.C.Board.
2.Disconnect the connector CN311 on the S.E.A P.C.Board
3.Remove the VIDEO P.C.Board.

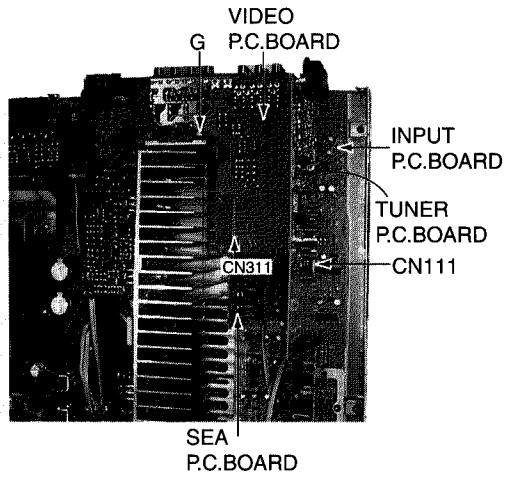


Fig.5

(6)INPUT P.C.BOARD Removal (Fig.6)

1.Disconnect the connector CN512 on the INPUT P.C.Board.
2.Disconnect the connector CN712 on the AMP P.C.Board.
3.Pullout the connector P.C.Board.
4.Remove 4 screws H on the INPUT P.C.Board.
5.Remove the INPUT P.C.Board.

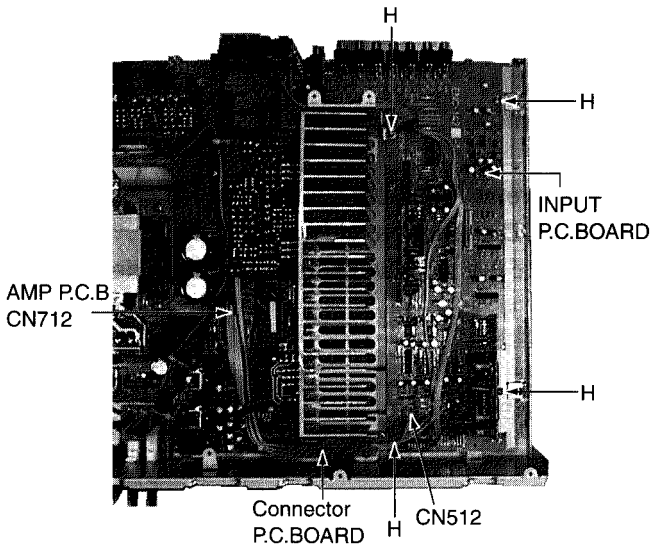


Fig.6

(7)MAIN P.C.BOARD Removal (Fig.7,8)

1.Remove 8 screws I on the MAIN P.C.Board.
2.Remove 8 screws J on the Power transistor.
3.Disconnect the connector CN511 and wire CN831 on the MAIN P.C.Board.
4.Pull out the AMP P.C.Board.
5.Each tiy band is cut out.
6.Remove 2 screws K on push switch of the front side.
7.Remove nut on terminal of the headphone.
8.Remove the MAIN P.C.Board.

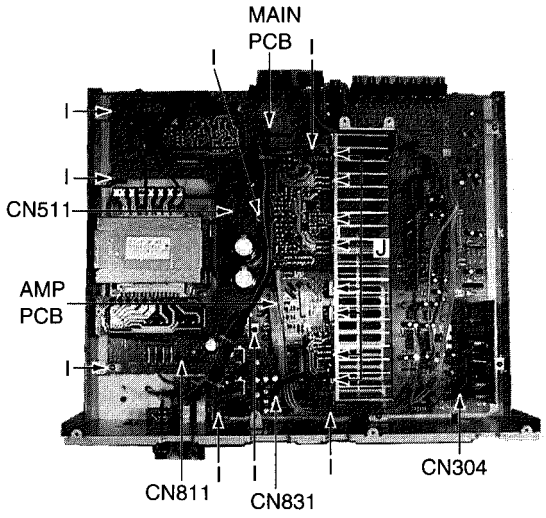


Fig.7

(8)Front P.C.BOARD Removal

1.Remove the top cover.
2.Remove the Front panel assembly.
3.Remove the master volume knob and nut.
4.Remove the 13 screws L on the Front P.C.Board.

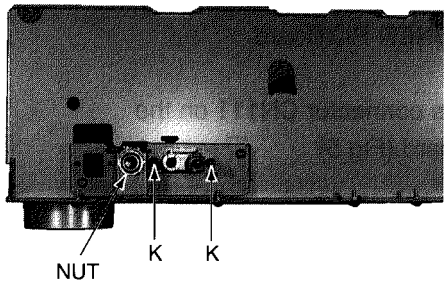


Fig.8

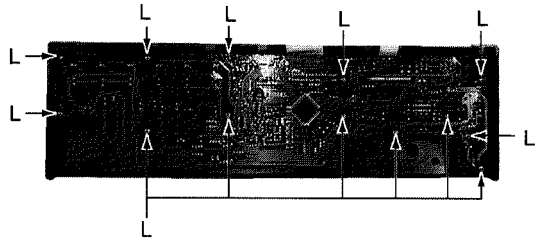


Fig.9

ADJUSTMENT PROCEDURES

■TUNER SECTION

1.Tuner range

FM 87.5MHz～108.0MHz

MW 530kHz～1710kHz

2.Tuning voltage

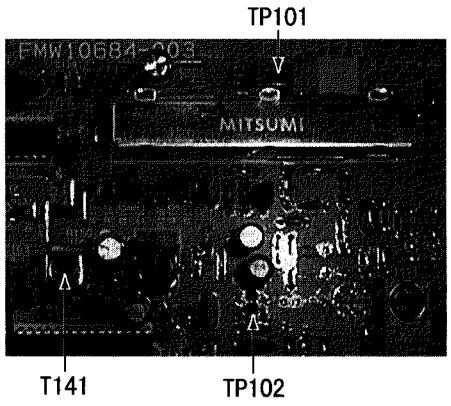
Confirm the voltages in the table at TP101

FM tuning voltage (Unit V)

87.5MHz	1.6 < 2.0
108.0MHz	8.0 < 9.0

MW tuning voltage (Unit V)

530kHz	0.8 < 1.0
1710kHz	8.0 < 8.8

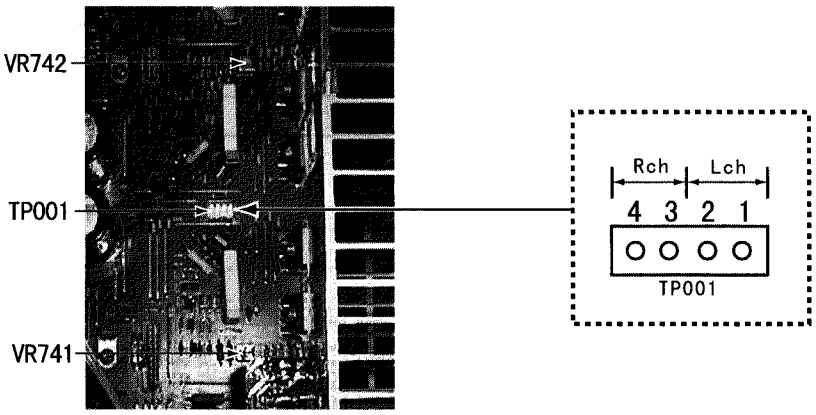


3.FM center meter

Receive a broadcast by using the function of 'AUTO STOP'

Adjust T141 (Detector coil) so that the voltage at TP102 becomes 0±1.5mV

■POWER AMPLIFIER SECTION



IDLING CURRENT

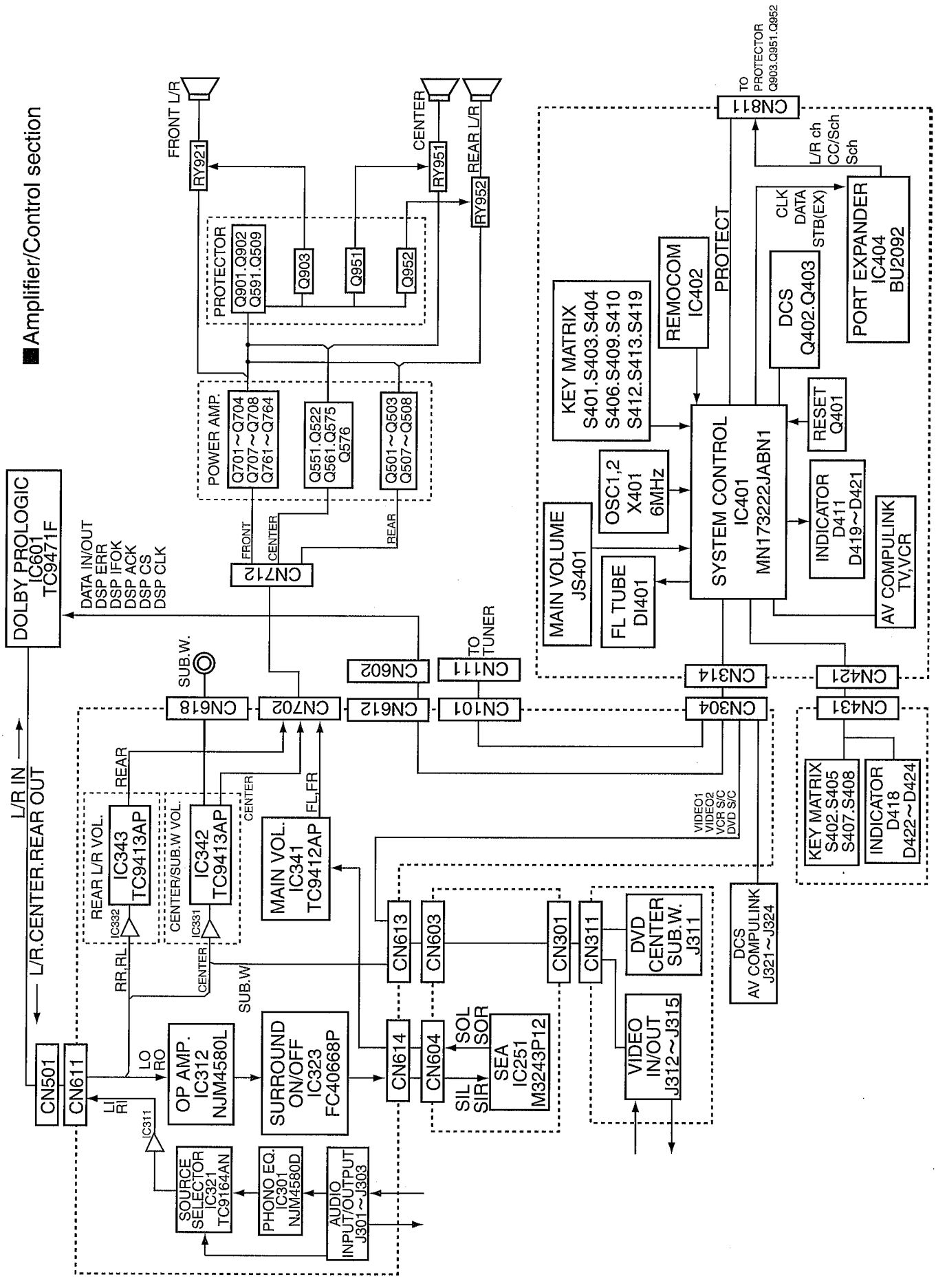
1.Set the volume control to minimum during this adjustment. set the surround mode "OFF"

2.Turn VR741 and VR742 fully counterclockwise to warm up before adjustment.
If the heat sink is already warm from previous use the correct adjustment can not be made.

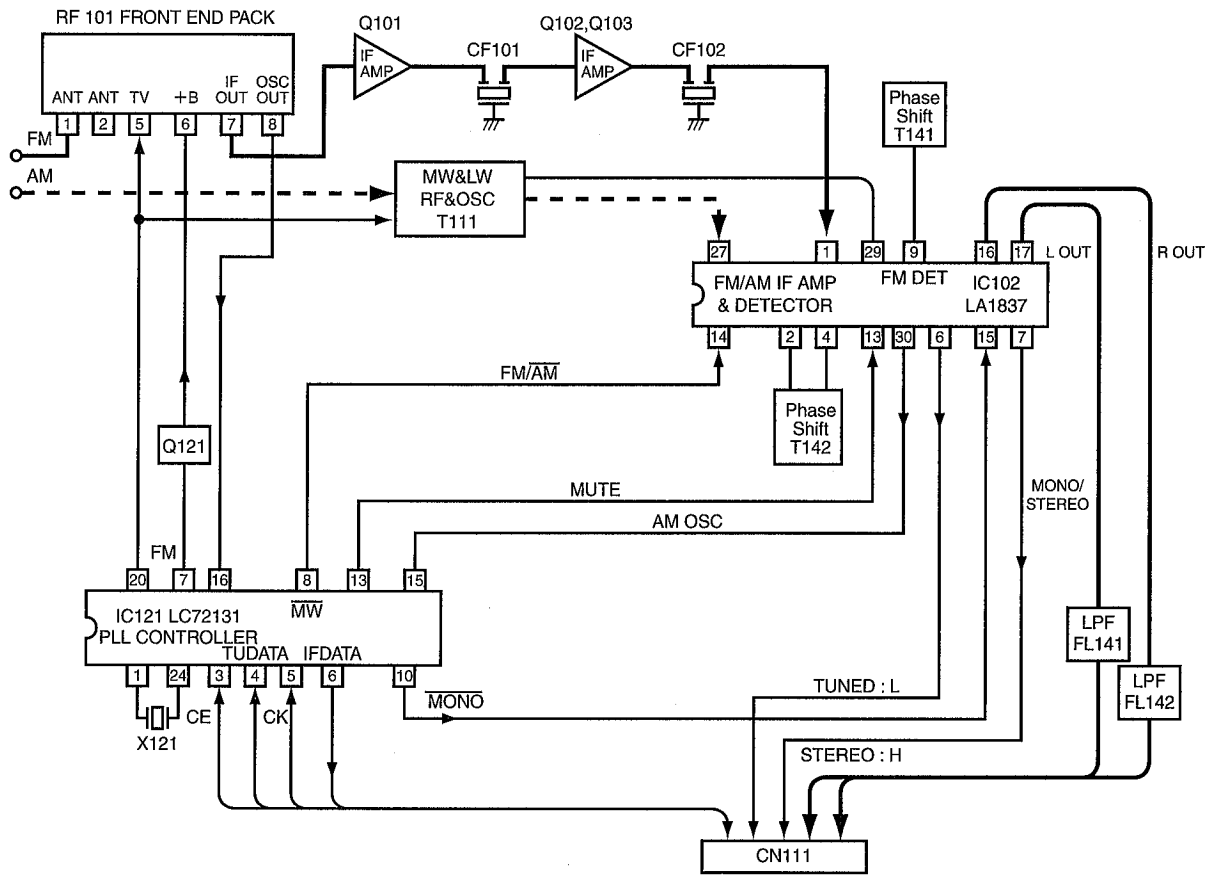
3.For L-ch,connect a DC voltmeter between TP001's pin1 and pin2 (Lch)
And,connect it between pin3 and pin4(Rch).

4.30 minutes later after power on, adjust VR741 for L-ch, or VR742 for R-ch so that the DC voltmeter value has 1mV～10mV.

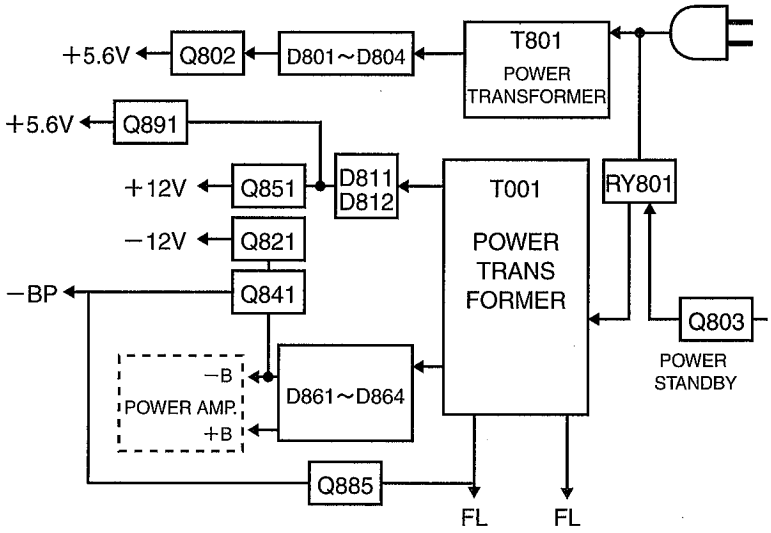
Amplifier/Control section



■Tuner Section

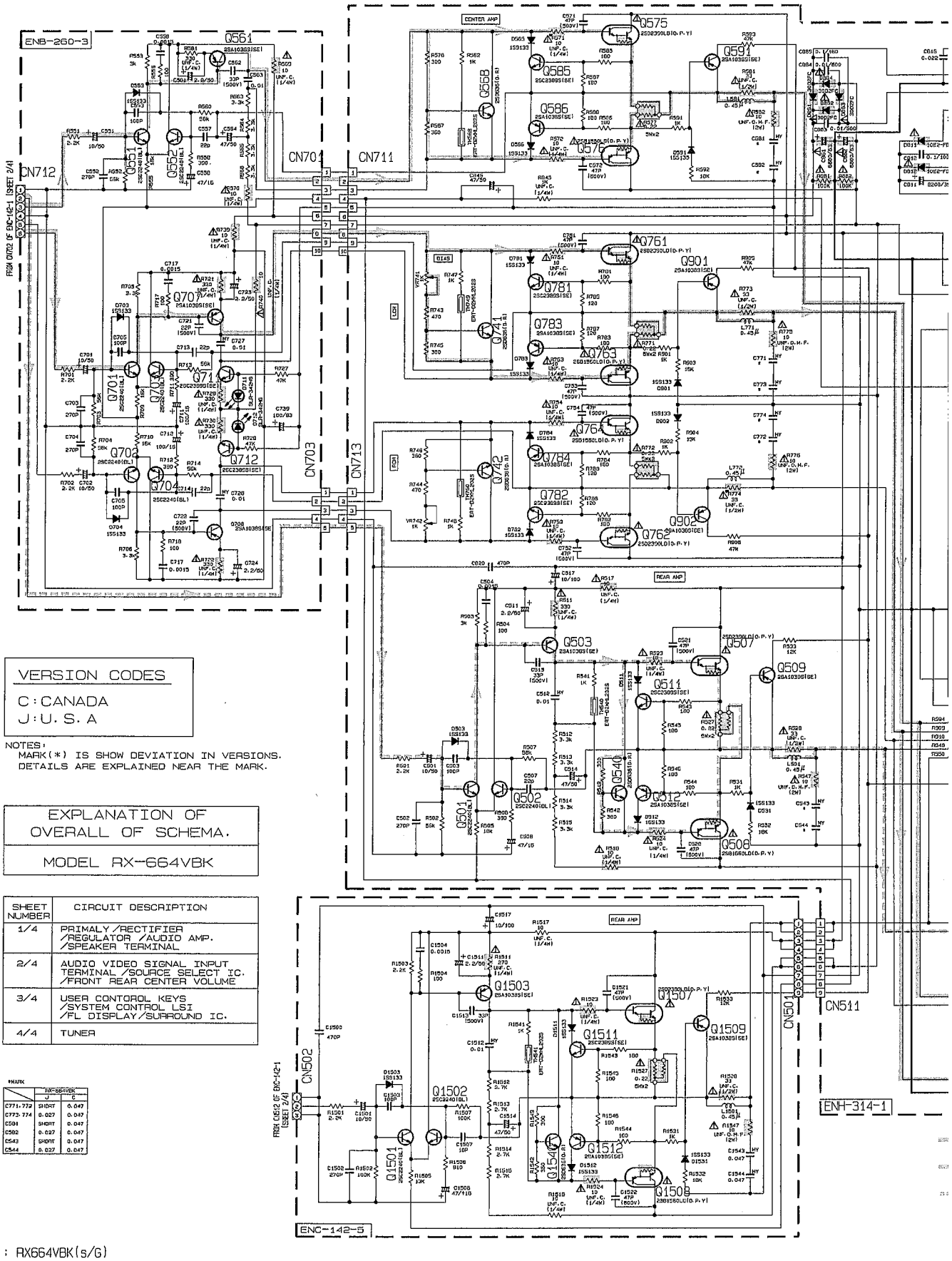


■Power Supply Section



-MEMO-

AUDIO AMP / POWER PRIMARY SECTION



VERSION CODES
C : CANADA
J : U. S. A

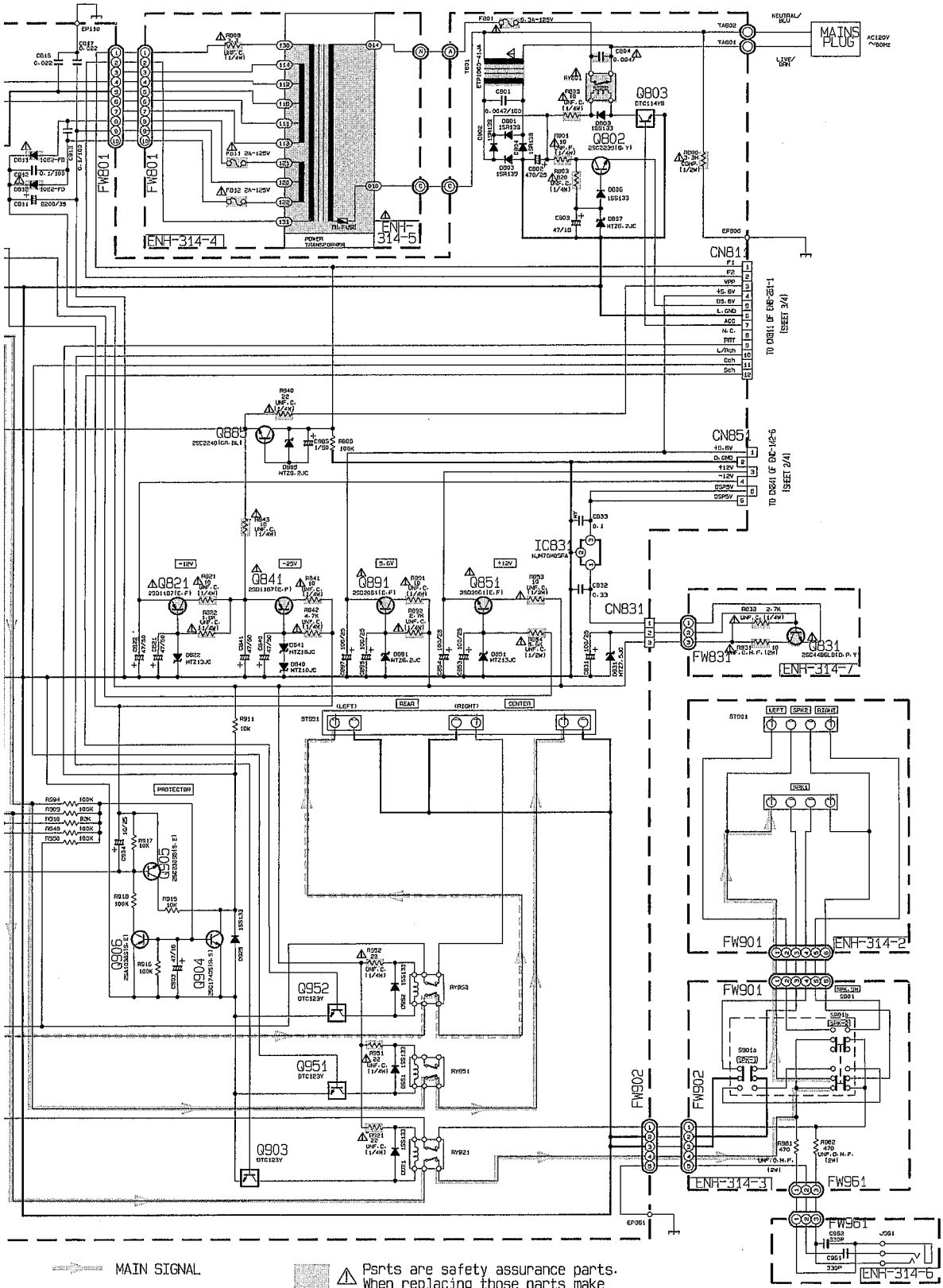
NOTES;
MARK(*) IS SHOW DEVIATION IN VERSIONS.
DETAILS ARE EXPLAINED NEAR THE MARK.

EXPLANATION OF OVERALL OF SCHEMA.
MODEL RX-664VBK

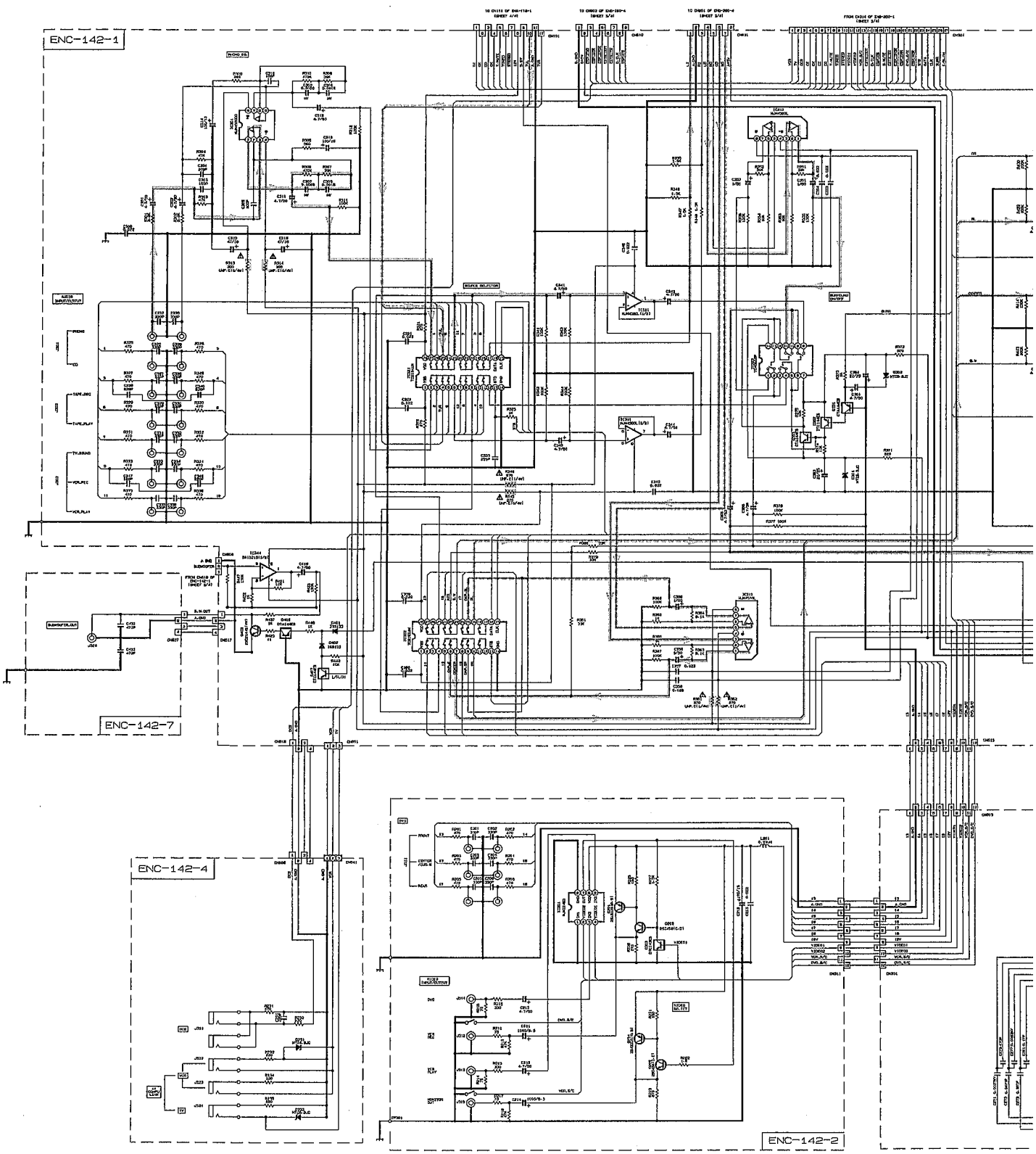
SHEET NUMBER	CIRCUIT DESCRIPTION
1/4	PRIMALY /RECTIFIER /REGULATOR /AUDIO AMP. /SPEAKER TERMINAL
2/4	AUDIO VIDEO SIGNAL INPUT TERMINAL /SOURCE SELECT IC. /FRONT REAR CENTER VOLUME
3/4	USER CONTOROL KEYS /SYSTEM CONTROL LSI /FL DISPLAY/SURROUND IC.
4/4	TUNER

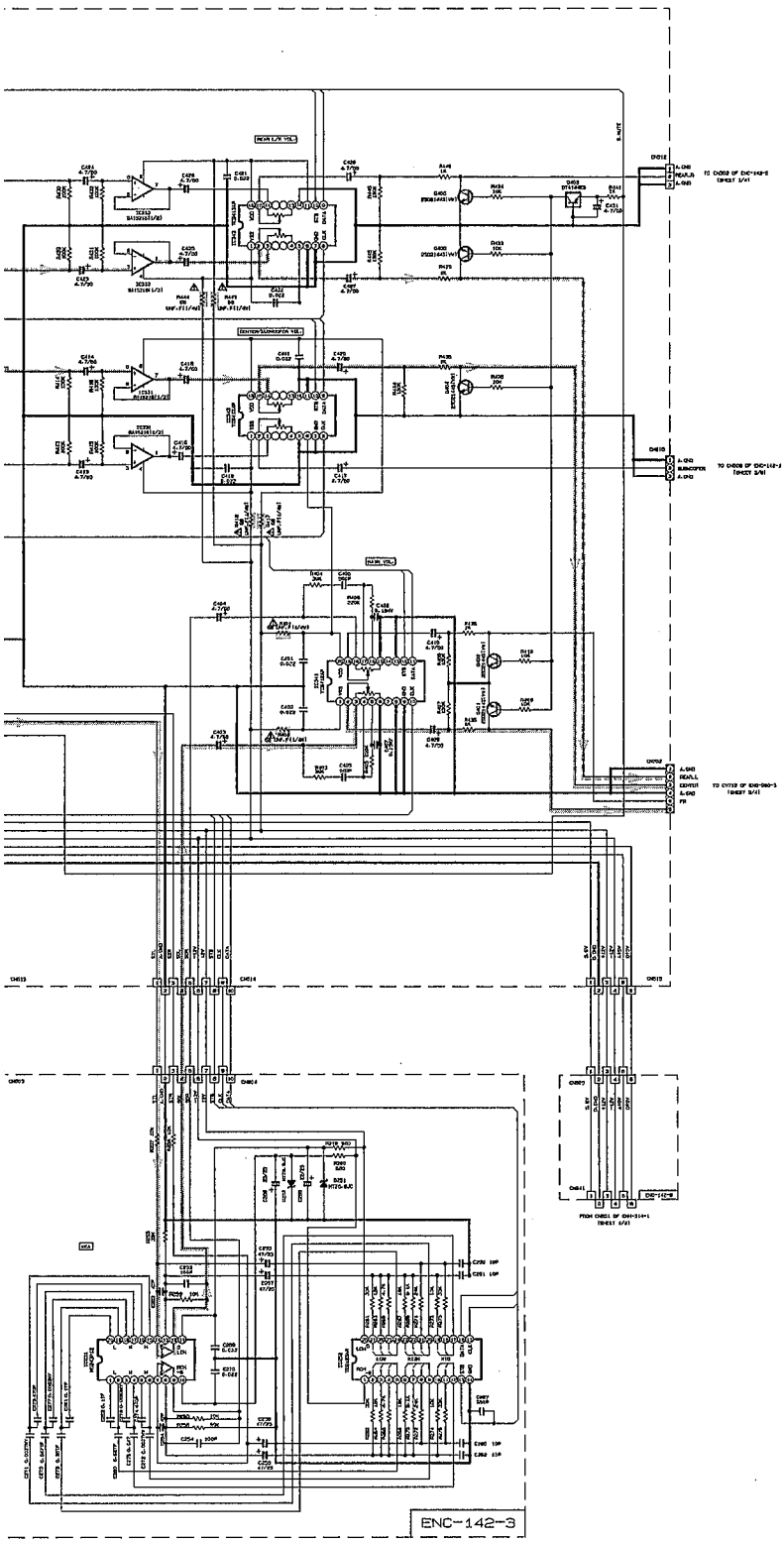
*MARK	RX-664VBK	
	J	C
C771, 772	SHORT	0.047
C773, 774	0.027	0.047
C591	SHORT	0.047
C592	0.027	0.047
C543	SHORT	0.047
C544	0.027	0.047

Note : RX664VBK(s/G)


MAINS PLUG
AC120V ~60Hz
FW801
ENH-314-4
ENH-314-5
POWER TRANSFORMER
CN811
TO CB11 OF ENH-321-1 (SHEET 3/4)
CN851
TO CB41 OF ENH-12-5 (SHEET 2/4)
Q803
DTC114YS
Q802
2SC2230(E,Y)
Q885
2SC2240(GR,BL)
IC831
NJM78M05FA
Q821
2SD1187(E,F)
Q841
2SD1187(E,F)
Q891
2SD2061(E,F)
Q851
2SD2061(E,F)
CN831
FW831
Q831
2SC4081(D,P,Y)
ENH-314-7
REAR
CENTER
(LEFT)
(RIGHT)
PROTECTOR
Q905
Q906
Q904
Q952
DTC123Y
Q951
DTC123Y
Q903
DTC123Y
FW902
FW901
ENH-314-2
ENH-314-3
FW961
ENH-314-6
MAIN SIGNAL
CENTER SIGNAL
REAR SIGNAL
Psrts are safety assurance parts.
When replacing those parts make
sure to use the specified one.

AUDIO / VIDEO SIGNAL INPUT SECTION





MAIN SIGNAL

CENTER SIGNAL

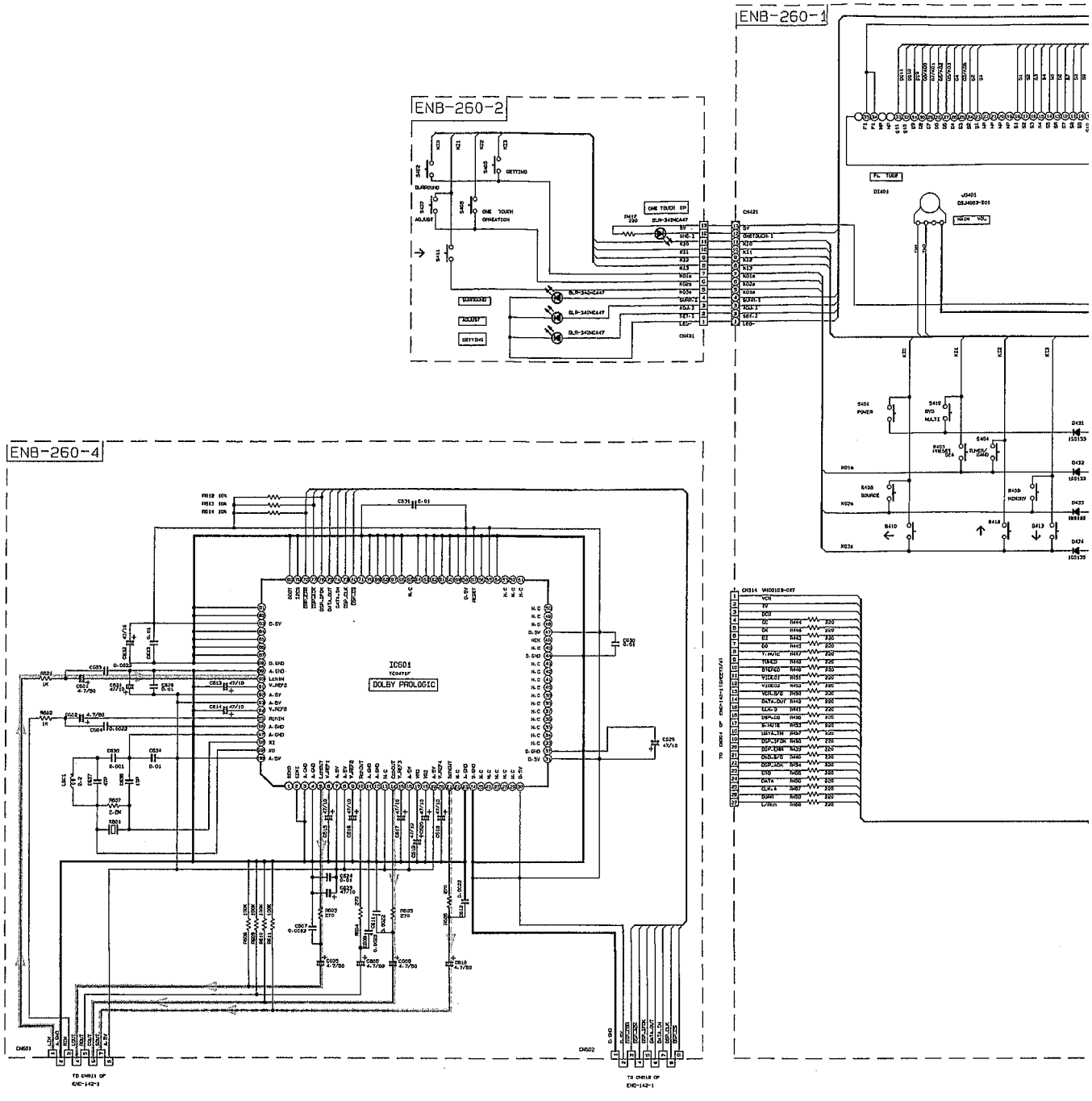
REAR SIGNAL

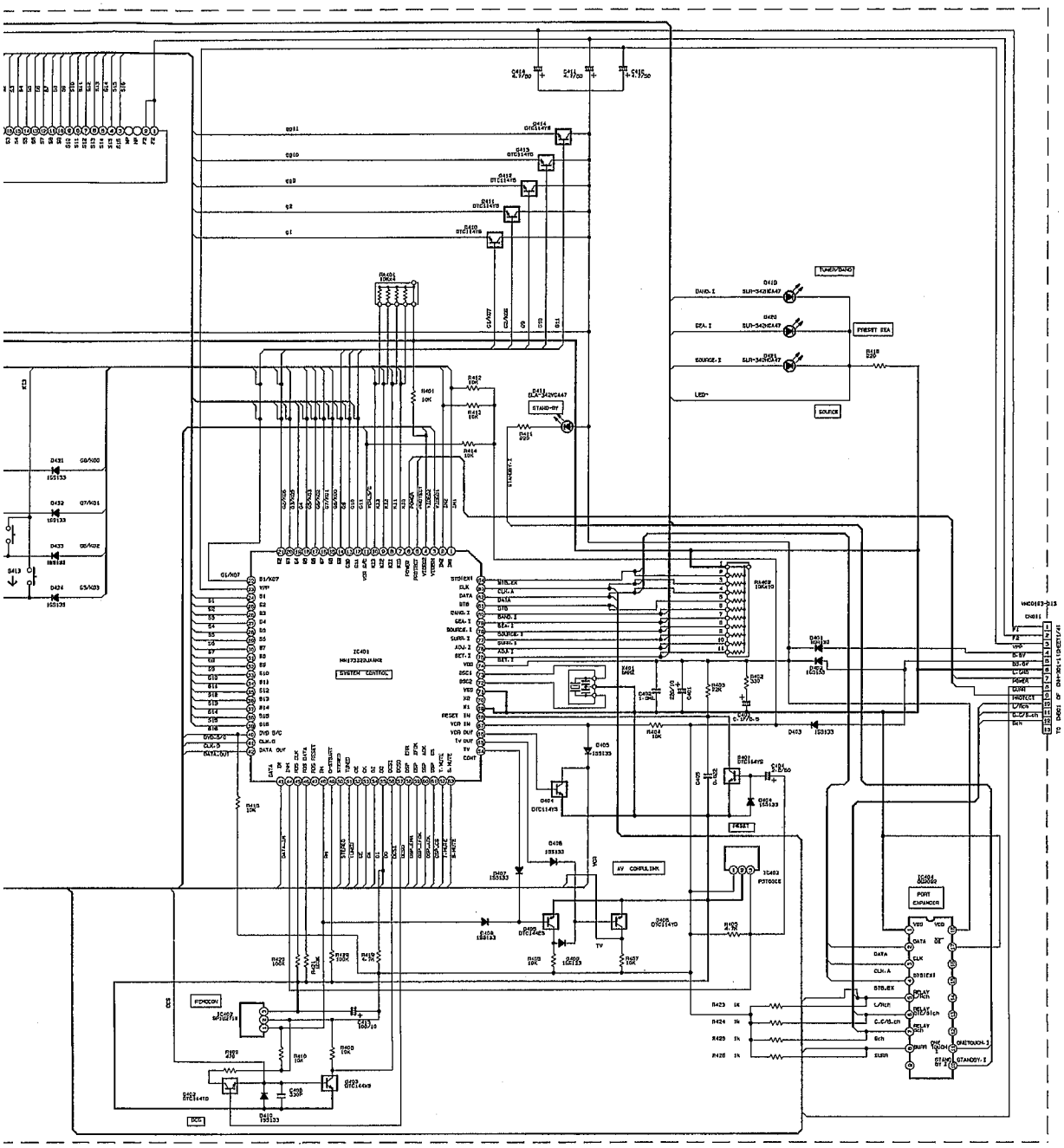
RADIO SIGNAL

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

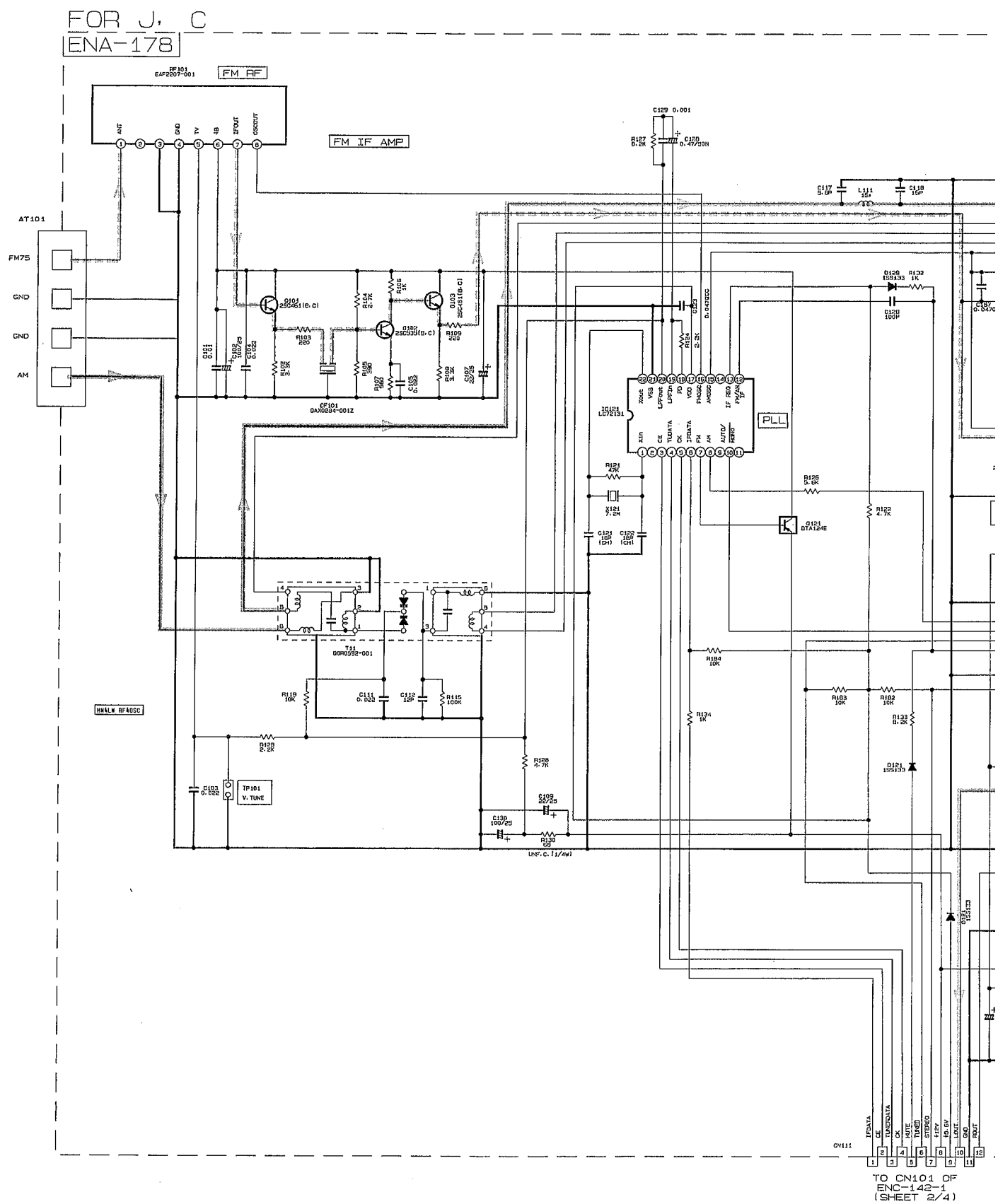
D E F G H

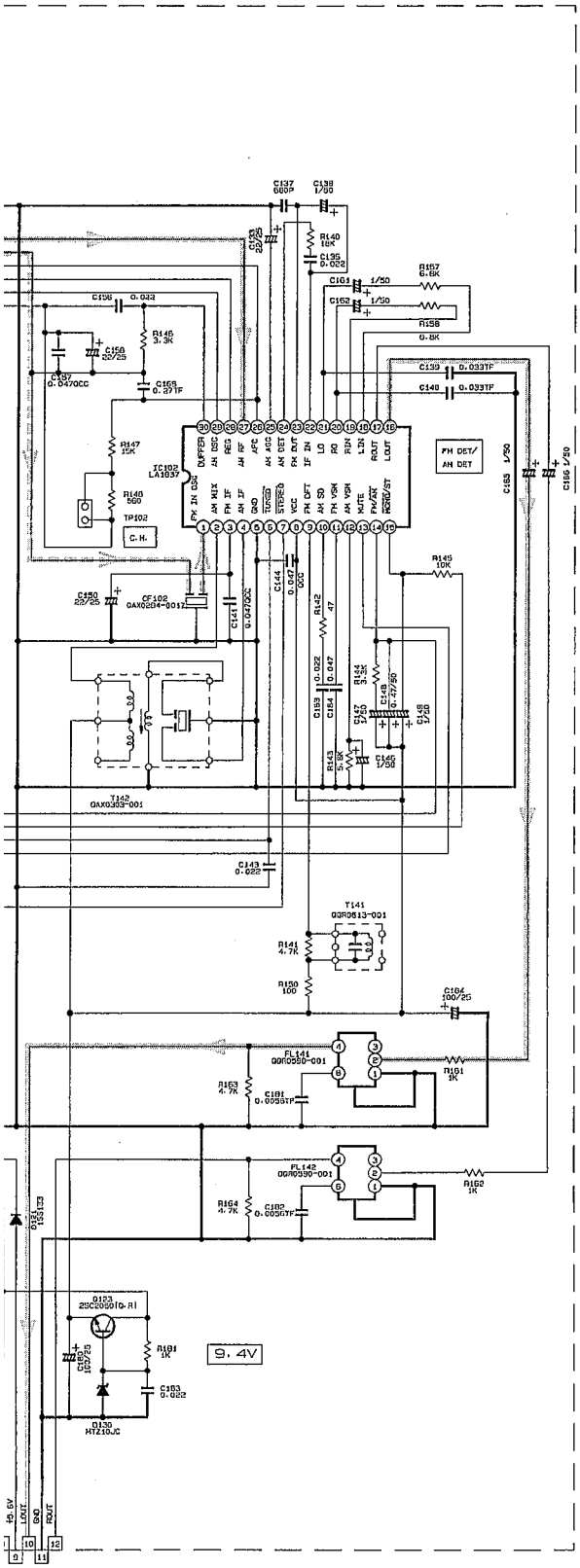
■ SYSTEM CONTROL SECTION



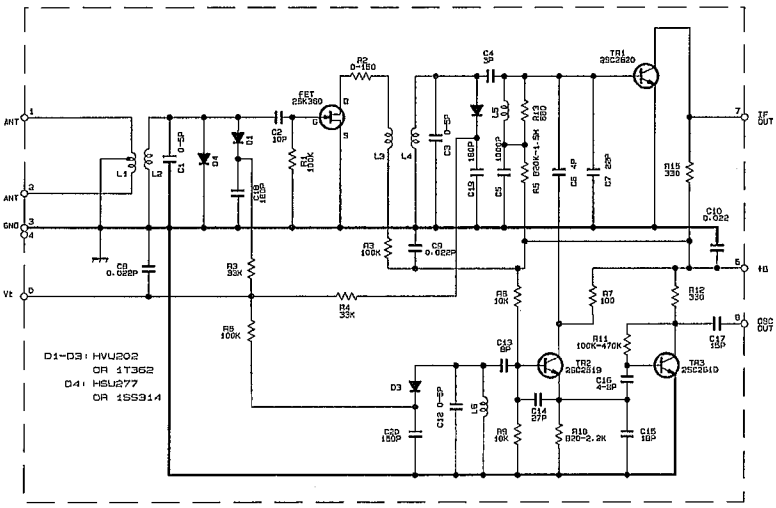

MAIN SIGNAL
CENTER SIGNAL
REAR SIGNAL

TUNER SECTION





RF101
EAF2207-001

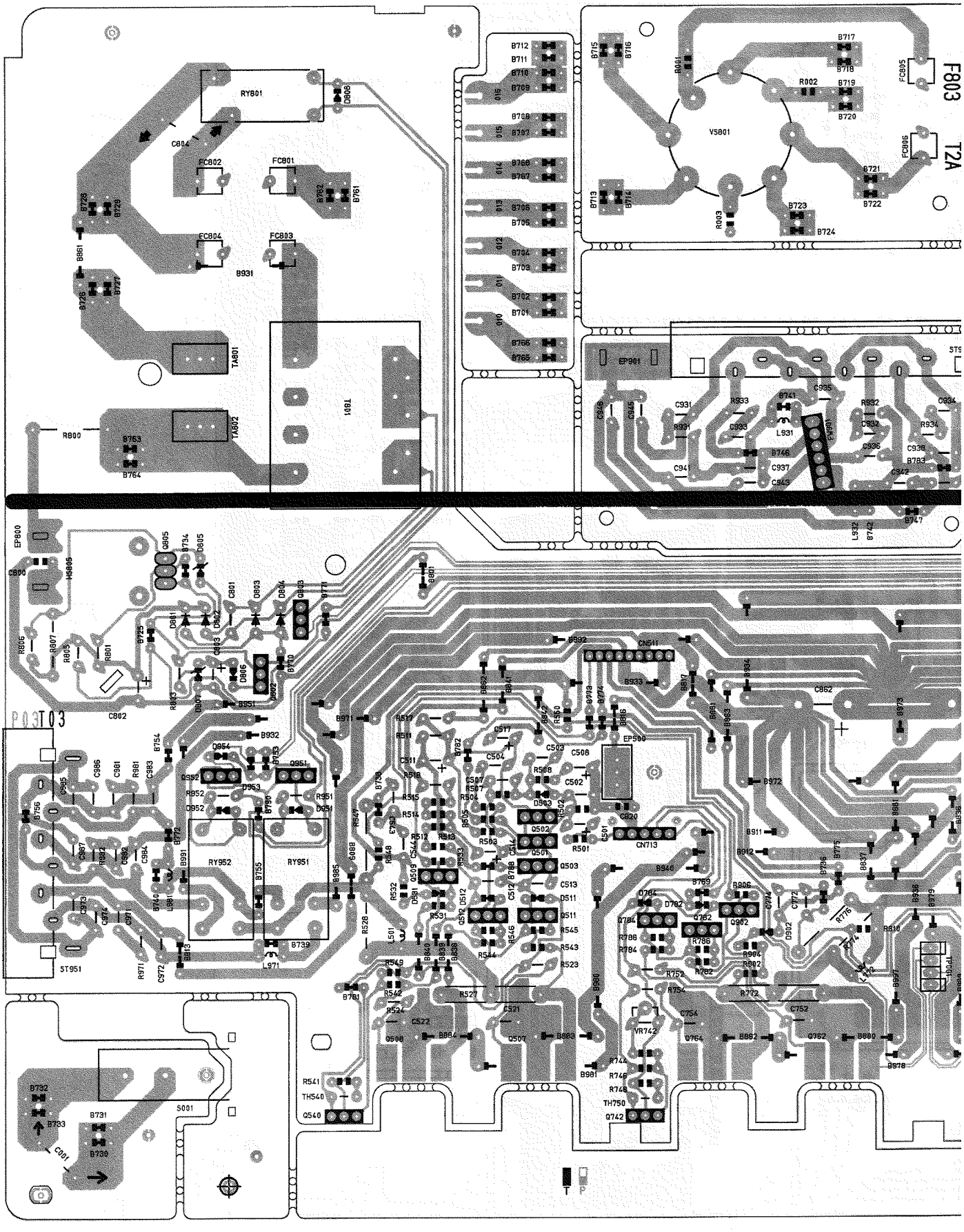


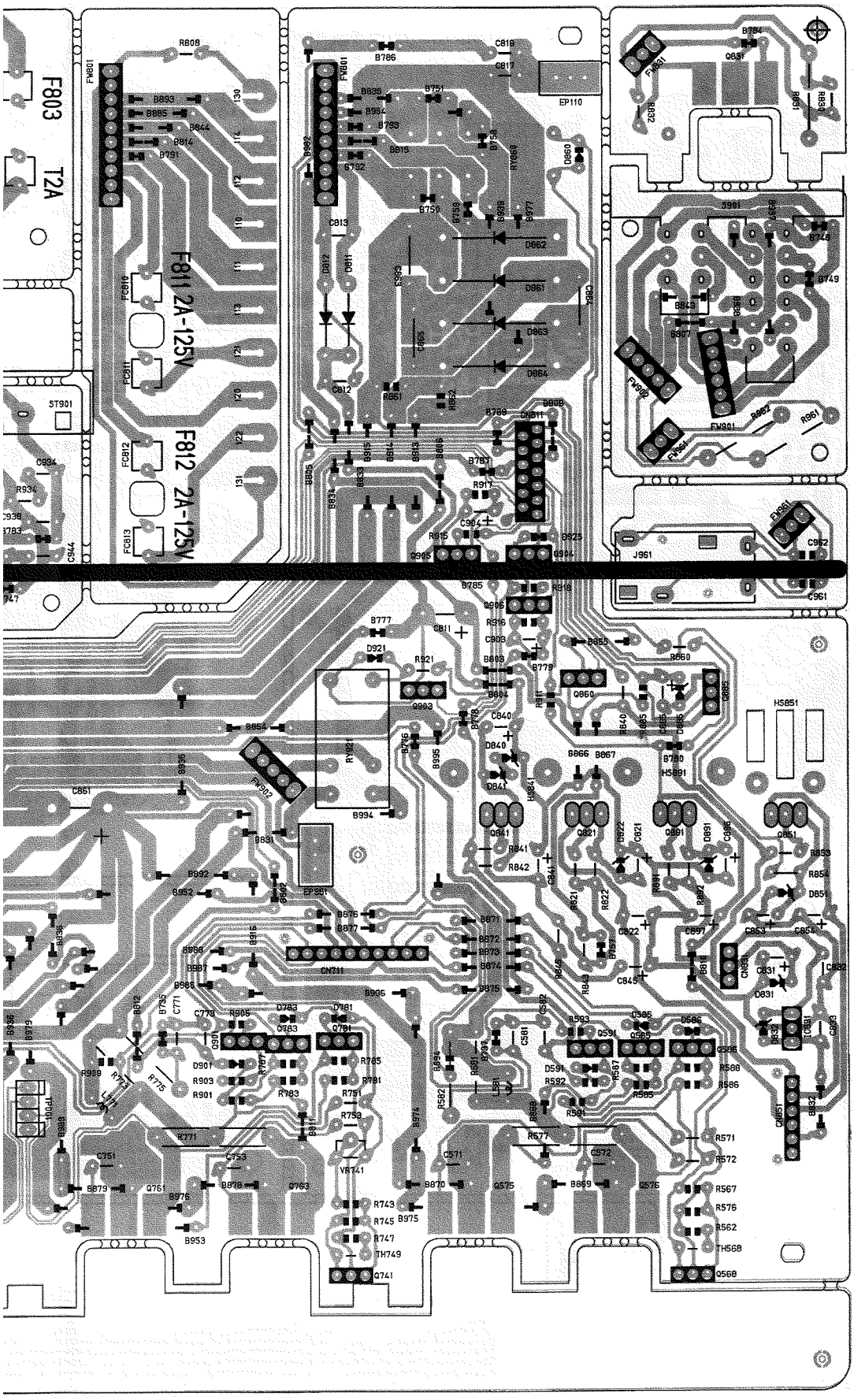
AM RADIO SIGNAL

FM RADIO SIGNAL

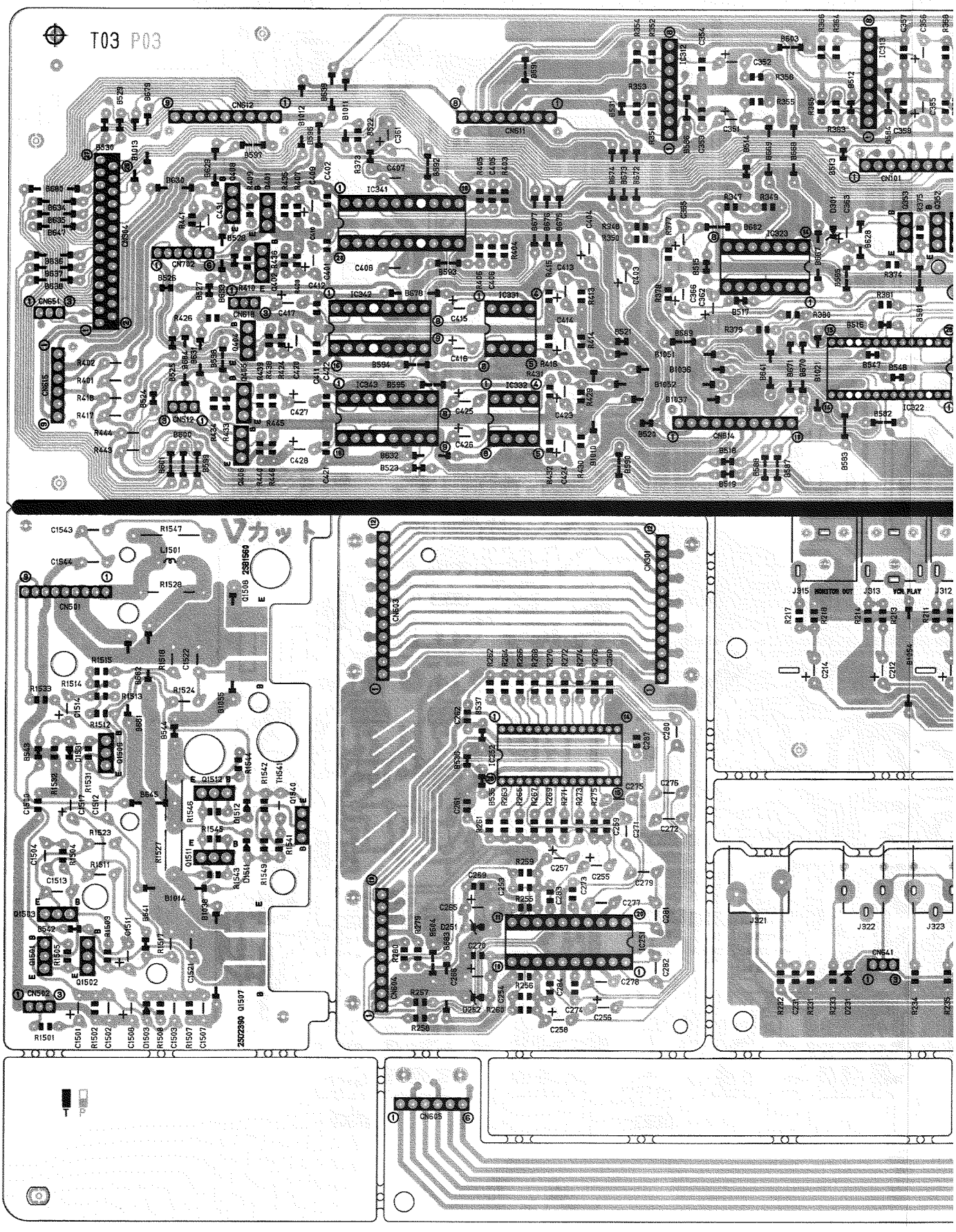
D	E	F	G	H

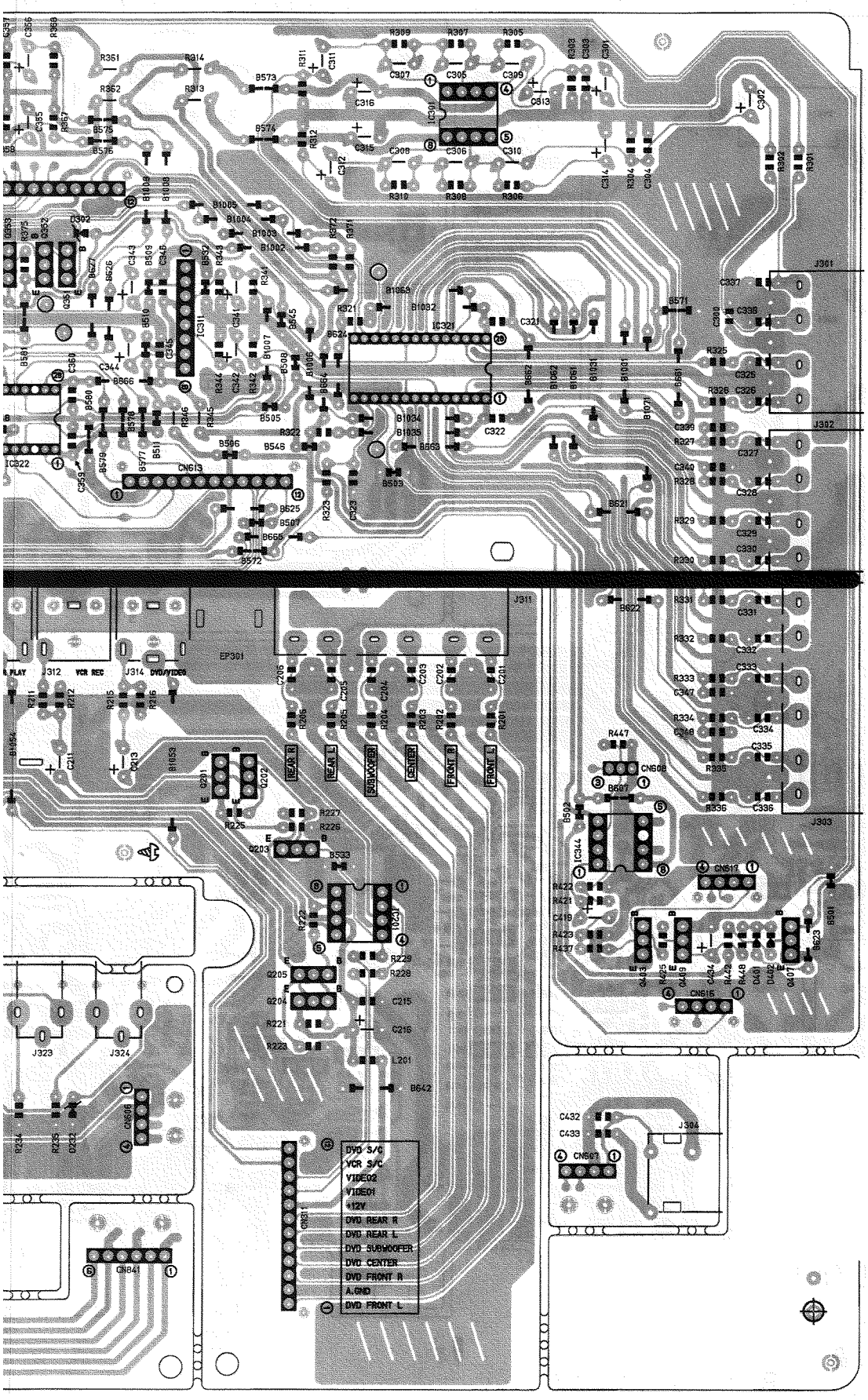
MAIN AMP.P.C.Board




F803 T2A
F811 2A-125V
F812 2A-125V

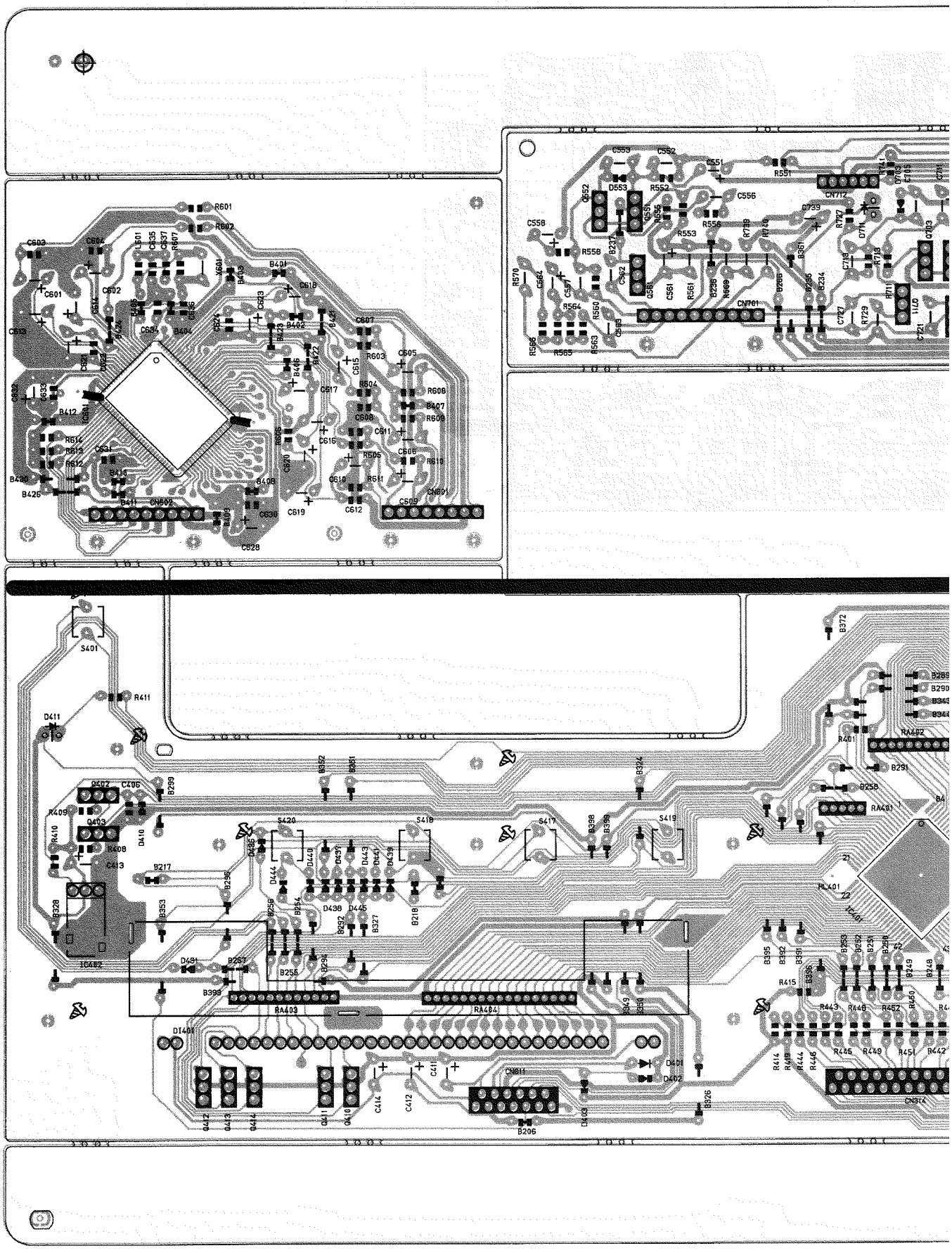
■ INPUT P.C.Board




J301
J302
J303
J304
J311
J312 VCR REC
J314 DVD/VIDEO
J323
J324
REAR R
REAR L
SUBWOOFER
CENTER
FRONT R
FRONT L
CN613
CN608
CN607
CN616
CN617
CN841
CN301
DVD S/C
VCR S/C
VIDEO2
VIDEO1
+12V
DVD REAR R
DVD REAR L
DVD SUBWOOFER
DVD CENTER
DVD FRONT R
A.GND
DVD FRONT L

D E F G H

FRONT P.C.Board



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4
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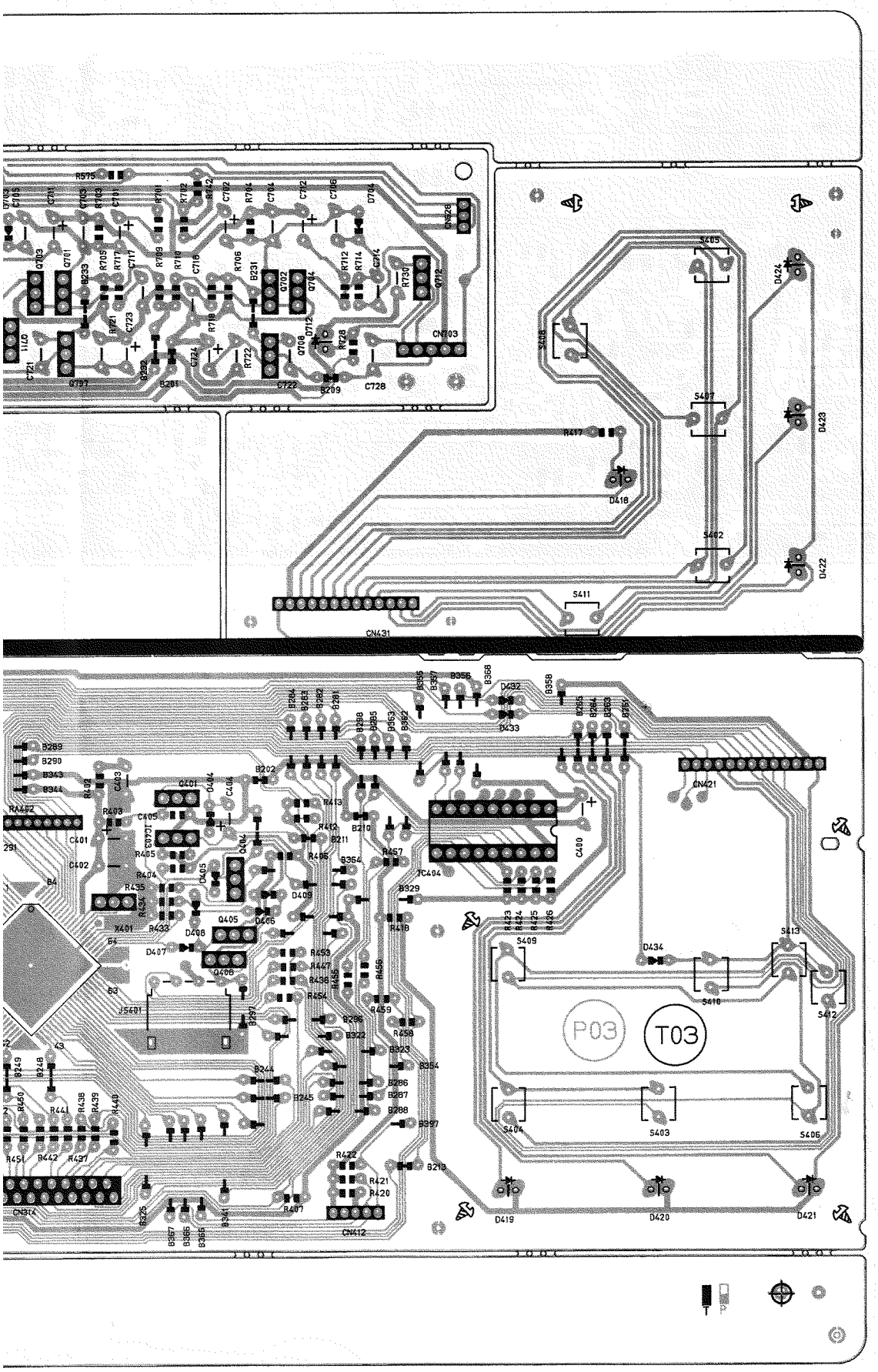
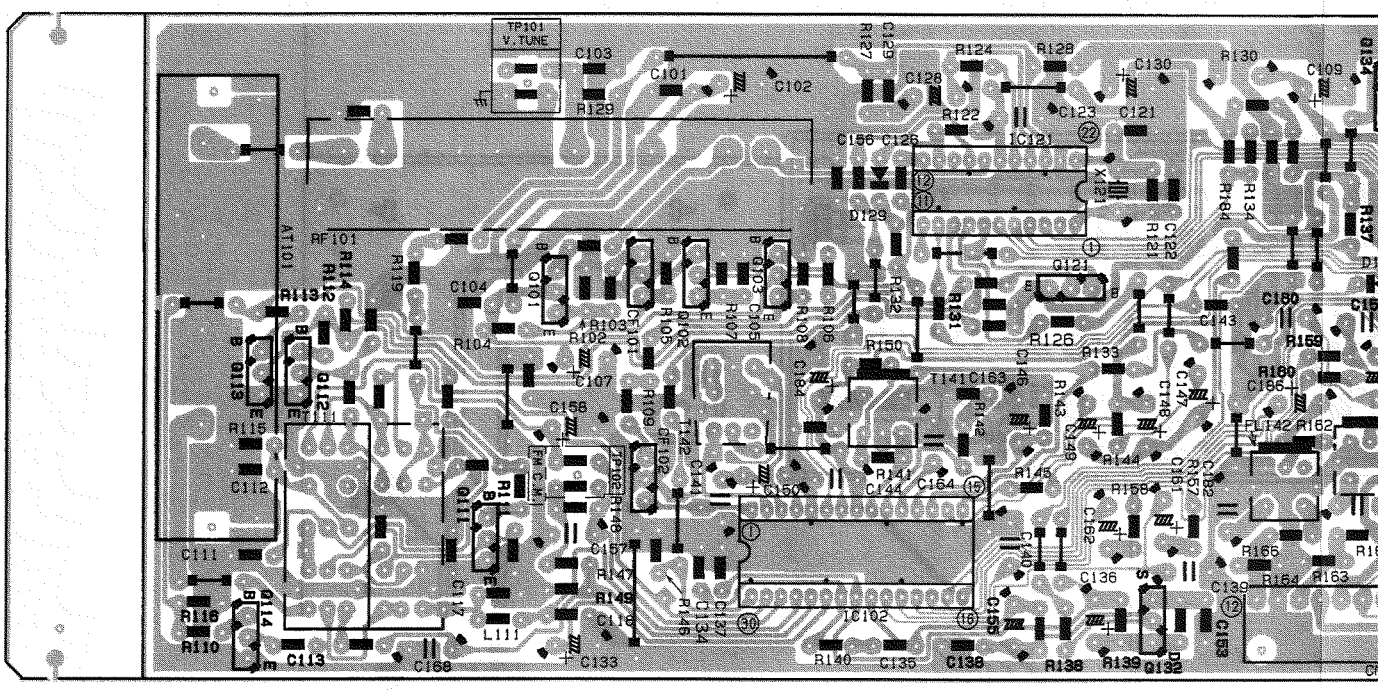
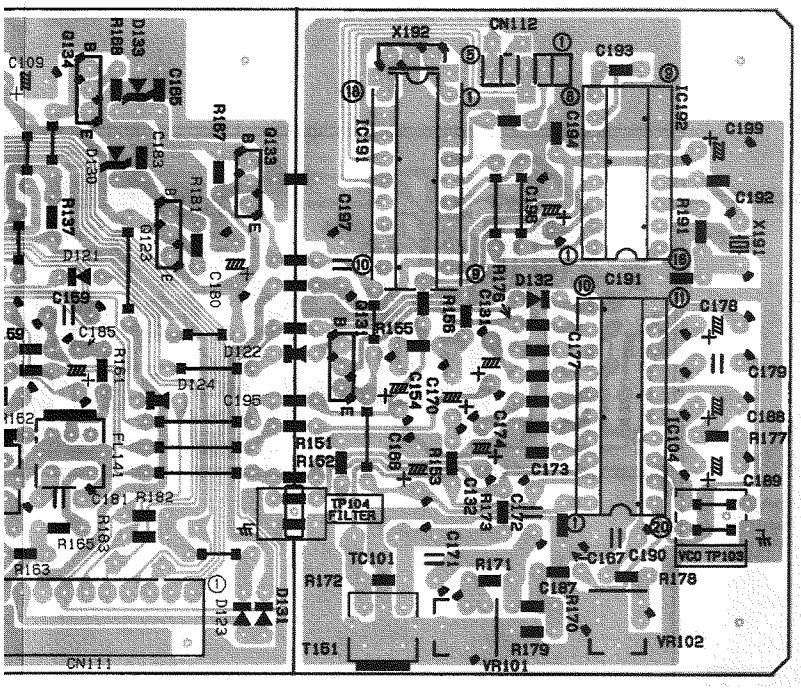
A B C D


P03
T03

■ TUNER P.C.Board




X192
CN112
C193
C109
Q134
R188
D133
C185
R187
Q133
C183
D130
R184
Q123
R137
D121
C180
C159
C185
R161
D122
D124
C195
R162
FL141
R151
R152
C181
R182
R183
R165
R163
TP104
FILTER
D123
D131
CN111
TC101
R172
T151
C171
R171
C187
R170
R179
VR101
VR102
C167
C190
R178
VCO TP103
TC104
C189
R177
C188
C179
C178
C191
D132
C177
C174
C173
C172
C132
R173
C154
C170
C198
R153
R155
C131
R176
C197
TC191
TC192
C194
C196
C199
C192
R191
X191

D | E | F | G | H

PARTS LIST

[RX-664VBK]

* All printed circuit boards and its assemblies are not available as service parts.

The Marks for Designated Areas

J ---- the U.S.A.
C ---- Canada

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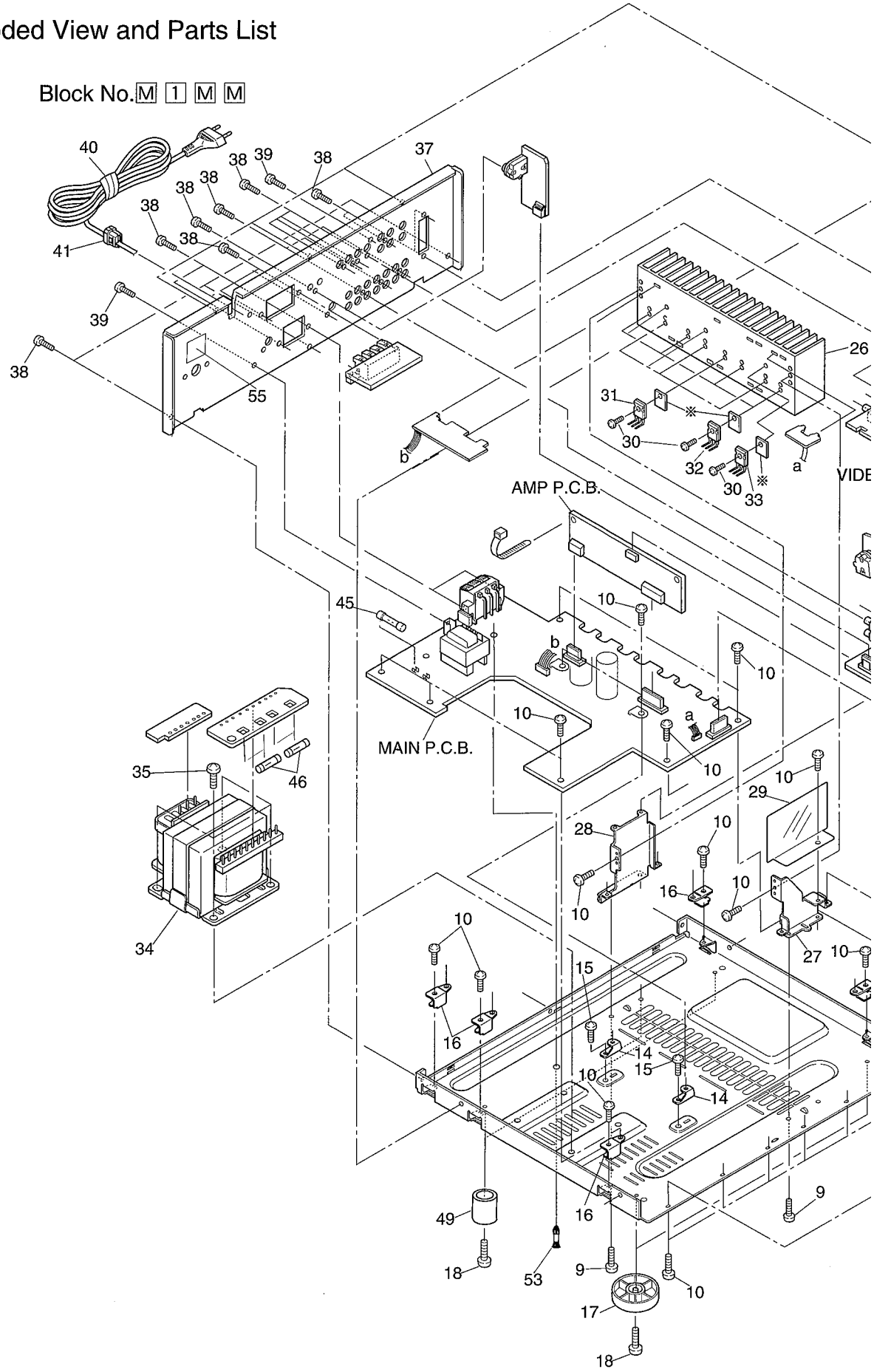
Parts List

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LE10079-014AKP	FRONT PANEL	1		
	2	LE30359-002A	POWER BUTTON	1		
	3	FSJD4001-002	INDICATOR LENS	1		
	4	LE20125-001A	PUSH BUTTON	1		
	5	LE40137-001A	INDICATOR LENS	7		
	6	LE30360-002AKP	PUSH BUTTON	1		
	8	QYSDSF2608Z	SCREW	13		
	9	QYSDSG3008M	SCREW	6		
	10	QYSBSG3008E	T.SCREW	33		
	11	LE10081-003AKP	CHASSIS BASE	1		
	12	LE20126-003A	FRONT BKT	1		
	13	LE30365-004AKP	BRACKET	1		
	14	E68587-223SM	P.W.BOARD BRACKET	2		
	15	QYSBST3006E	TAP.SCREW	4		
	16	LE40138-001A	GUIDE BRACKET	5		
	17	VJF4039-00MSM	FOOT ASSY	2		
	18	QYSBST3010Z	SCREW	4		
	19	E407321-002SM	PUSH BUTTON	2		
	24	VKZ4150-001	NUT	1		
	25	VWF1227-30TTB	FLAT WIRE	1	FW304	
	26	LV30351-001AKP	HEAT SINK	1		
	27	E310171-001SM	HEAT SINK BRACKET	1		
	28	E310172-001SM	HEAT SINK BRACKET	1		
	29	LE40263-001A	PROTECTOR COVER	1		
	30	E73525-003	SCREW	11		
⚠	31	2SD2390LD/0PY/	SI.TRANSISTOR	4	Q761,Q762,Q507,Q575	
⚠		2SD2390LD/0PY/	SI.TRANSISTOR	1	Q1507	
⚠	32	2SB1560LD/0PY/	SI.TRANSISTOR	4	Q763,Q764,Q508,Q576	
⚠		2SB1560LD/0PY/	SI.TRANSISTOR	1	Q1508	
⚠	33	2SC4466LD/0PY/	SI.TRANSISTOR	1	Q831	
⚠	34	QQT0187-001KP	TRANSFORMER	1		
	35	QYSDSTL4008E	SPECIAL SCREW	4		
	37	LE20127-016AKP	REAR PANEL	1		
	38	QYSBSGY3008M	SPECIAL SCREW	22		
	39	QYSBST3006M	SCREW	2		
⚠	40	QMP1D00-200H	POWER CORD	1		
⚠	41	QHS3771-108	CORD STOPPER	1		
	42	LE20131-001A	METAL COVER	1		
	43	E406308-003	SPECIAL SCREW	4		
	44	LV30414-001A	M.VOL KNOB	1		
⚠	45	QMF51U1-6R3-J1	FUSE	1	F801	
⚠	46	QMF51U1-2R0-J1	FUSE	2	F811,F812	
	49	E47227-036	FOOT	2		
	50	E409530-001SM	P.W.BOARD HOLDER	1		
	51	E310243-002	PLASTIC RIVET	2		
	52	VWF1213-16TTB	FLAT WIRE	1	FW811	
	53	LV30384-001A	FASTENER	1		
	54	E409394-001	CAUTION LABEL	1		J
		E409396-001	CAUTION LABEL	1		C
	55	E65507-001	CAUTION LABEL	1		C
	56	VKZ4001-111S	WIRE CLAMP	1		
	57	LE30361-003AKP	WINDOW SCREEN	1		
	58	VJD5429-001	JVC MARK	1		

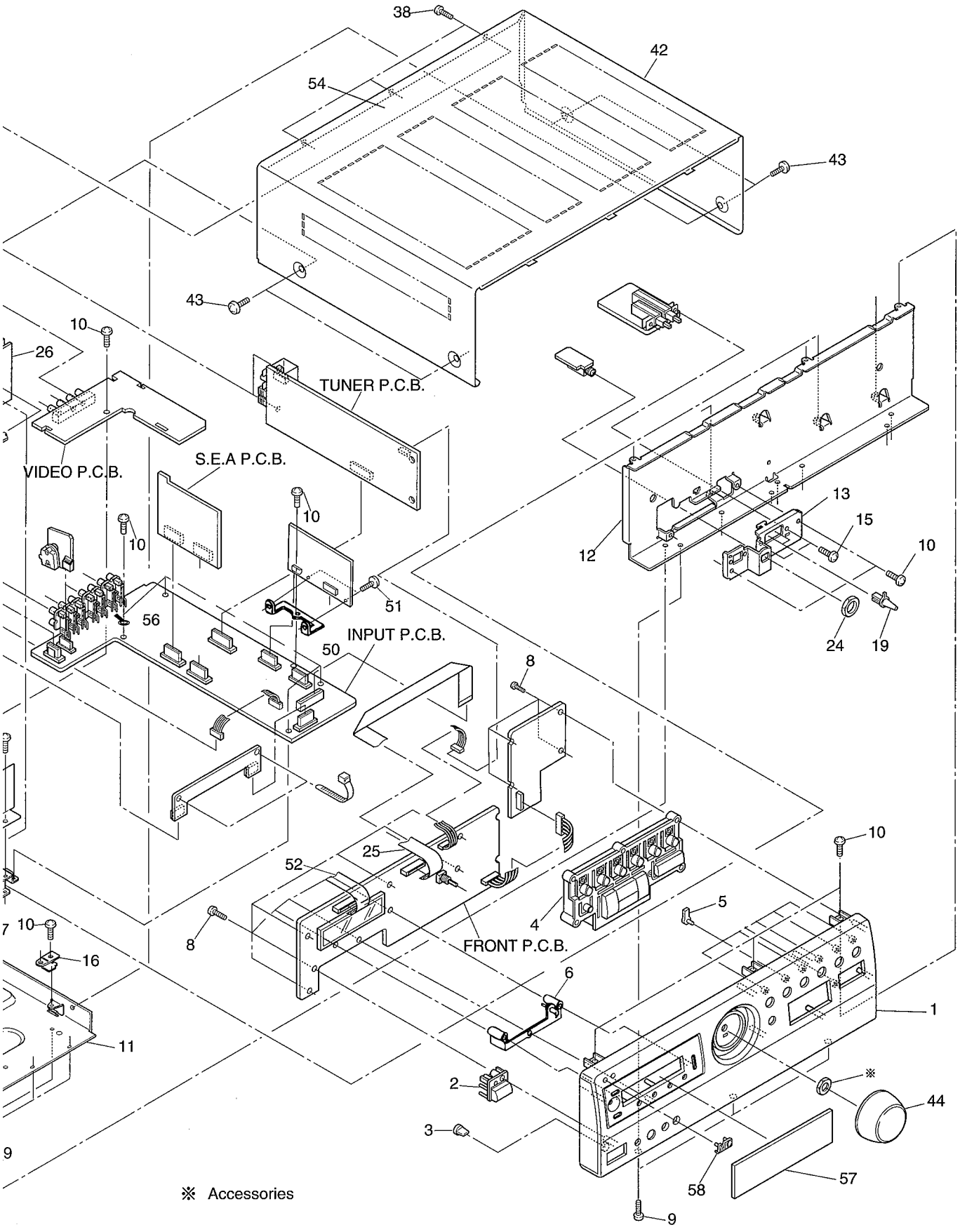
General Exploded View and Parts List

Block No. M 1 M M



5 4 3 2 1

A B C D


38
42
54
43
43
10
26
TUNER P.C.B.
VIDEO P.C.B.
S.E.A P.C.B.
10
10
56
51
INPUT P.C.B.
50
8
13
15
10
12
24
19
10
25
52
4
5
8
FRONT P.C.B.
10
16
6
1
11
2
※
44
3
58
57
9
※ Accessories

■Electrical Parts List(TUNER P.C.B.)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC102	LA1837	I.C(MONO-ANALOG)	
	IC121	LC72131	I.C(M)	
		DIODES		
	D121	1SS133-T2	SI.DIODE	
	D123	1SS133-T2	SI.DIODE	
	D129	1SS133-T2	SI.DIODE	
	D130	MTZJ10C-T2	ZENER	
		TRANSISTORS		
	Q101	2SC461/BC/-T	SILICON	
	Q102	2SC535/BC/-T	SILICON	
	Q103	2SC461/BC/-T	SILICON	
	Q121	DTA124ES-T	SILICON	
	Q123	2SC2060/QR/-T	SILICON	
		CAPACITORS		
	C101	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C102	QETC1EM-107Z	100MF 25V AL E.CAP.	
	C103	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C104	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C105	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C107	QETC1EM-226ZM	22MF 25V E.CAP.	
	C109	QETC1EM-226ZM	22MF 25V E.CAP.	
	C111	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C112	QDCB1HJ-120Y	12PF 50V C CAP.	
	C117	QCSB1HK-5R6Y	5.6PF 50V CER.CAP.	
	C118	QCSB1HJ-150Y	15PF 50V CER.CAP.	
	C121	QDCB1HJ-180Y	18PF 50V C.CAP.	
	C122	QDCB1HJ-180Y	18PF 50V C.CAP.	
	C123	QDX31EM-473Z	0.047MF 25V C CAP.	
	C126	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C128	QENB1HM-474	0.47MF 50V NP E.CAP.	
	C129	QCGB1HK-102	1000PF 50V CER.CAP.	
	C130	QETC1EM-107Z	100MF 25V AL E.CAP.	
	C133	QETC1EM-226ZM	22MF 25V E.CAP.	
	C134	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C135	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C136	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C137	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C139	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C140	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C141	QDX31EM-473Z	0.047MF 25V C CAP.	
	C143	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C144	QDX31EM-473Z	0.047MF 25V C CAP.	
	C146	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C147	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C148	QETN1HM-474Z	0.47MF 50V AL E.CAP.	
	C149	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C150	QETC1EM-226ZM	22MF 25V E.CAP.	
	C156	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C157	QDX31EM-473Z	0.047MF 25V C CAP.	
	C158	QETC1EM-226ZM	22MF 25V E.CAP.	
	C161	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C162	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C163	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C164	QDX31EM-473Z	0.047MF 25V C CAP.	
	C168	QFVJ1HJ-274Z	0.27MF 50V T.FILM	
	C180	QETC1EM-107Z	100MF 25V AL E.CAP.	
	C181	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C182	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C183	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C184	QETC1EM-107Z	100MF 25V AL E.CAP.	
	C185	QETN1HM-105Z	1MF 50V AL E.CAP.	
	C186	QETN1HM-105Z	1MF 50V AL E.CAP.	
		RESISTORS		
	R102	QRE141J-332Y	3.3K 1/4W R.NETWORK	

⚠	Item	Parts Number	Description	Area
	R103	QRE141J-221Y	220 1/4W R.NETWORK	
	R104	QRE141J-272Y	2.7K 1/4W R.NETWORK	
	R105	QRE141J-391Y	390 1/4W R.NETWORK	
	R106	QRE141J-102Y	1K 1/4W R.NETWORK	
	R107	QRE141J-561Y	560 1/4W R.NETWORK	
	R108	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R109	QRE141J-221Y	220 1/4W R.NETWORK	
	R115	QRE141J-104Y	100K 1/4W R.NETWORK	
	R119	QRE141J-103Y	10K 1/4W R.NETWORK	
	R121	QRE141J-473Y	47K 1/4W R.NETWORK	
	R122	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R124	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R126	QRE141J-562Y	5.6K 1/4W R.NETWORK	
	R127	QRE141J-822Y	8.2K 1/4W R.NETWORK	
	R128	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R129	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R130	QRJ146J-680X	68 1/4W R.NETWORK	
	R132	QRE141J-102Y	1K 1/4W R.NETWORK	
	R133	QRE141J-822Y	8.2K 1/4W R.NETWORK	
	R134	QRE141J-102Y	1K 1/4W R.NETWORK	
	R140	QRE141J-183Y	18K 1/4W R.NETWORK	
	R141	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R142	QRE141J-470Y	47 1/4W R.NETWORK	
	R143	QRE141J-562Y	5.6K 1/4W R.NETWORK	
	R144	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R145	QRE141J-103Y	10K 1/4W R.NETWORK	
	R146	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R147	QRE141J-153Y	15K 1/4W R.NETWORK	
	R148	QRE141J-561Y	560 1/4W R.NETWORK	
	R150	QRE141J-101Y	100 1/4W R.NETWORK	
	R157	QRE141J-682Y	6.8K 1/4W R.NETWORK	
	R158	QRE141J-682Y	6.8K 1/4W R.NETWORK	
	R161	QRE141J-102Y	1K 1/4W R.NETWORK	
	R162	QRE141J-102Y	1K 1/4W R.NETWORK	
	R163	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R164	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R181	QRE141J-102Y	1K 1/4W R.NETWORK	
	R182	QRE141J-103Y	10K 1/4W R.NETWORK	
	R183	QRE141J-103Y	10K 1/4W R.NETWORK	
	R184	QRE141J-103Y	10K 1/4W R.NETWORK	
		OTHERS		
	L111	QQL231K-150Y	INDUCTOR I.M	
	T111	QQR0592-001	RF COIL	
	T141	QQR0613-001	I.F.TRANSFORMER	
	T142	QAX0303-001	CERAMIC FILTER	
	X121	QAX0259-001Z	RESONATOR I.M	
	AT101	QNB0008-001	ANT TERMINAL	
	CF101	QAX0284-001Z	CERAMIC FILTER	
	CF102	QAX0284-001Z	CERAMIC FILTER	
	CN111	QGB2510K1-12	CONNECTOR	
	FL141	QQR0590-001	FILTER	
	FL142	QQR0590-001	FILTER	
	RF101	EAF2207-001	FRONT END	

■Electrical Parts List (MAIN P.C.B)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC831	NJM78M05FA	I.C(MONO-ANALOG)	
		DIODES		
	D503	1SS133-T2	SI.DIODE	
	D511	1SS133-T2	SI.DIODE	
	D512	1SS133-T2	SI.DIODE	
	D531	1SS133-T2	SI.DIODE	
	D585	1SS133-T2	SI.DIODE	
	D586	1SS133-T2	SI.DIODE	
	D591	1SS133-T2	SI.DIODE	
	D781	1SS133-T2	SI.DIODE	
	D782	1SS133-T2	SI.DIODE	
	D783	1SS133-T2	SI.DIODE	
	D784	1SS133-T2	SI.DIODE	
	D801	1SR139-200-T4	SILICON	
	D802	1SR139-200-T4	SILICON	
	D803	1SR139-200-T4	SILICON	
	D804	1SR139-200-T4	SILICON	
	D806	1SS133-T2	SI.DIODE	
	D807	MTZJ6.2C-T2	ZENER	
	D808	1SS133-T2	SI.DIODE	
⚠	D811	10E2-FD	DIODE	
⚠	D812	10E2-FD	DIODE	
	D822	MTZJ13C-T2	ZENER	
	D831	MTZJ7.5C-T2	ZENER	
	D840	MTZJ10C-T2	ZENER	
	D841	MTZJ16C-T2	ZENER	
	D851	MTZJ13C-T2	ZENER	
⚠	D861	30D2-FC	SILICON	
⚠	D862	30D2-FC	SILICON	
⚠	D863	30D2-FC	SILICON	
⚠	D864	30D2-FC	SILICON	
	D885	MTZJ6.2C-T2	ZENER	
	D891	MTZJ6.2C-T2	ZENER	
	D901	1SS133-T2	SI.DIODE	
	D902	1SS133-T2	SI.DIODE	
	D921	1SS133-T2	SI.DIODE	
	D925	1SS133-T2	SI.DIODE	
	D951	1SS133-T2	SI.DIODE	
	D952	1SS133-T2	SI.DIODE	
		TRANSISTORS		
	Q501	2SC2240/L/-T	SILICON	
	Q502	2SC2240/L/-T	SILICON	
	Q503	2SA1038S/SE/-T	SILICON	
	Q509	2SA1038S/SE/-T	SILICON	
	Q511	2SC2389S/SE/-T	SILICON	
	Q512	2SA1038S/SE/-T	SILICON	
	Q540	2SD636/QR/	SILICON	
	Q568	2SD636/QR/	SILICON	
	Q585	2SC2389S/SE/-T	SILICON	
	Q586	2SA1038S/SE/-T	SILICON	
	Q591	2SA1038S/SE/-T	SILICON	
	Q741	2SD636/QR/	SILICON	
	Q742	2SD636/QR/	SILICON	
	Q781	2SC2389S/SE/-T	SILICON	
	Q782	2SC2389S/SE/-T	SILICON	
	Q783	2SA1038S/SE/-T	SILICON	
	Q784	2SA1038S/SE/-T	SILICON	
	Q802	2SC2235/OY/-T	SILICON	
	Q803	DTC123YS-T	SILICON	
⚠	Q821	2SB1187/EF/	SILICON	
⚠	Q841	2SB1187/EF/	SILICON	
⚠	Q851	2SD2061/EF/	SILICON	
	Q885	2SC2240/GL/-T	SILICON	
⚠	Q891	2SD2061/EF/	SILICON	

⚠	Item	Parts Number	Description	Area
	Q901	2SA1038S/SE/-T	SILICON	
	Q902	2SA1038S/SE/-T	SILICON	
	Q903	DTC123YS-T	SILICON	
	Q904	2SC1740S/RS/-T	SILICON	
	Q905	2SC2389S/SE/-T	SILICON	
	Q906	2SA1038S/SE/-T	SILICON	
	Q951	DTC123YS-T	SILICON	
	Q952	DTC123YS-T	SILICON	
		CAPACITORS		
	C501	QETB1HM-106	10MF 50V E.CAP.	
	C502	QCS21HJ-271A	270PF 50V CER.CAP.	
	C503	QCS21HJ-101A	100PF 50V CER.CAP.	
	C504	QCB31HK-152Z	1500PF 50V CERAMIC	
	C507	QCS21HJ-220A	22PF 50V CER.CAP.	
	C508	QETB1CM-476	47MF 16V AL E.CAP.	
	C511	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C512	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C513	QCS22HJ-330	33PF 500V CER.CAP.	
	C514	QETB1HM-476	47MF 50V E.CAP.	
	C517	QETB2AM-106	10MF 100V AL E.CAP.	
	C521	QCS22HJ-470A	47PF 500V CER.CAP.	
	C522	QCS22HJ-470A	47PF 500V CER.CAP.	
	C543	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C544	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	J
		QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C571	QCS22HJ-470A	47PF 500V CER.CAP.	
	C572	QCS22HJ-470A	47PF 500V CER.CAP.	
	C581	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C582	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	J
		QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C751	QCS22HJ-470A	47PF 500V CER.CAP.	
	C752	QCS22HJ-470A	47PF 500V CER.CAP.	
	C753	QCS22HJ-470A	47PF 500V CER.CAP.	
	C754	QCS22HJ-470A	47PF 500V CER.CAP.	
	C771	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C772	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C773	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	J
		QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C774	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	J
		QFLB1HJ-473	0.047MF 50V MYLAR CAP.	C
	C801	QFN82AK-472	4700PF 100V METAL.MYLAR	
	C802	QETN1EM-477Z	470MF 25V ELECTRO	
	C803	QETB1CM-476	47MF 16V AL E.CAP.	
⚠	C804	QCZ9019-472	4700PF C.CAP.	
	C811	QETB1VM-228N	2200MF 35V E.CAP.	
	C812	QFN82AJ-104	0.1MF 100V MYLAR CAP.	
	C813	QFN82AJ-104	0.1MF 100V MYLAR CAP.	
	C816	QCF31HZ-223Z	0.022MF 50V CERAMIC	
	C817	QCF31HZ-223Z	0.022MF 50V CERAMIC	
	C821	QETB1HM-476	47MF 50V E.CAP.	
	C822	QETB1HM-476	47MF 50V E.CAP.	
	C831	QETB1EM-107	100MF 25V AL E.CAP.	
	C832	QFVJ1HJ-334Z	0.33MF 50V T.FILM	
	C833	QFLB1HJ-104	0.1MF 50V MYLAR CAP.	
	C840	QETB1HM-476	47MF 50V E.CAP.	
	C841	QETB1HM-476	47MF 50V E.CAP.	
	C845	QETB1HM-476	47MF 50V E.CAP.	
	C853	QETB1EM-107	100MF 25V AL E.CAP.	
	C854	QETB1EM-107	100MF 25V AL E.CAP.	
⚠	C861	QEZ0341-688	6800MF E.CAP.	
⚠	C862	QEZ0341-688	6800MF E.CAP.	
	C863	QCE22HP-103A	0.01MF 500V CER.CAP.	
	C864	QCE22HP-103A	0.01MF 500V CER.CAP.	
	C865	QFN82CK-104	0.1MF 160V METAL.MYLAR	
	C885	QETB1HM-105	1MF 50V AL E.CAP.	

Electrical Parts List (MAIN P.C.B)

⚠	Item	Parts Number	Description	Area
	C896	QETB1EM-107	100MF 25V AL E.CAP.	
	C897	QETB1EM-107	100MF 25V AL E.CAP.	
	C903	QETB1CM-476	47MF 16V AL E.CAP.	
	C904	QETB1EM-106	10MF 25V AL E.CAP.	
	C961	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C962	QCBB1HK-331Y	330PF 50V CER.CAP.	
		RESISTORS		
	R501	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R502	QRE141J-563Y	56K 1/4W R.NETWORK	
	R503	QRE141J-302Y	3K 1/4W R.NETWORK	
	R504	QRE141J-101Y	100 1/4W R.NETWORK	
	R505	QRE141J-183Y	18K 1/4W R.NETWORK	
	R507	QRE141J-563Y	56K 1/4W R.NETWORK	
	R508	QRE141J-391Y	390 1/4W R.NETWORK	
⚠	R511	QRJ146J-331X	330 1/4W R.NETWORK	
	R512	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R513	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R514	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R515	QRE141J-332Y	3.3K 1/4W R.NETWORK	
⚠	R517	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R518	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R523	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R524	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R527	QRZ0197-R22	0.22 1W NETWORK RES.	
⚠	R528	QRJ129J-330	33 1/2W R.NETWORK	
	R531	QRE141J-102Y	1K 1/4W R.NETWORK	
	R532	QRE141J-183Y	18K 1/4W R.NETWORK	
	R533	QRE141J-123Y	12K 1/4W R.NETWORK	
	R541	QRE141J-471Y	470 1/4W R.NETWORK	
	R542	QRE141J-361Y	360 1/4W R.NETWORK	
	R543	QRE141J-181Y	180 1/4W R.NETWORK	
	R544	QRE141J-181Y	180 1/4W R.NETWORK	
	R545	QRE141J-181Y	180 1/4W R.NETWORK	
	R546	QRE141J-181Y	180 1/4W R.NETWORK	
⚠	R547	QRL022J-100	10 2W R.NETWORK	
	R548	QRE141J-104Y	100K 1/4W R.NETWORK	
	R549	QRE141J-301Y	300 1/4W R.NETWORK	
	R550	QRE141J-104Y	100K 1/4W R.NETWORK	
	R562	QRE141J-471Y	470 1/4W R.NETWORK	
	R567	QRE141J-361Y	360 1/4W R.NETWORK	
⚠	R571	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R572	QRJ146J-100X	10 1/4W R.NETWORK	
	R576	QRE141J-301Y	300 1/4W R.NETWORK	
⚠	R577	QRZ0197-R22	0.22 1W NETWORK RES.	
⚠	R581	QRJ129J-330	33 1/2W R.NETWORK	
⚠	R582	QRL022J-100	10 2W R.NETWORK	
	R585	QRE141J-181Y	180 1/4W R.NETWORK	
	R586	QRE141J-181Y	180 1/4W R.NETWORK	
	R587	QRE141J-181Y	180 1/4W R.NETWORK	
	R588	QRE141J-181Y	180 1/4W R.NETWORK	
	R591	QRE141J-102Y	1K 1/4W R.NETWORK	
	R592	QRE141J-183Y	18K 1/4W R.NETWORK	
	R593	QRE141J-473Y	47K 1/4W R.NETWORK	
	R594	QRE141J-104Y	100K 1/4W R.NETWORK	
	R743	QRE141J-471Y	470 1/4W R.NETWORK	
	R744	QRE141J-471Y	470 1/4W R.NETWORK	
	R745	QRE141J-361Y	360 1/4W R.NETWORK	
	R746	QRE141J-361Y	360 1/4W R.NETWORK	
	R747	QRE141J-471Y	470 1/4W R.NETWORK	
	R748	QRE141J-471Y	470 1/4W R.NETWORK	
⚠	R751	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R752	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R753	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R754	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R771	QRZ0197-R22	0.22 1W NETWORK RES.	

⚠	Item	Parts Number	Description	Area
⚠	R772	QRZ0197-R22	0.22 1W NETWORK RES.	
⚠	R773	QRJ129J-330	33 1/2W R.NETWORK	
⚠	R774	QRJ129J-330	33 1/2W R.NETWORK	
⚠	R775	QRL022J-100	10 2W R.NETWORK	
⚠	R776	QRL022J-100	10 2W R.NETWORK	
	R781	QRE141J-181Y	180 1/4W R.NETWORK	
	R782	QRE141J-181Y	180 1/4W R.NETWORK	
	R783	QRE141J-181Y	180 1/4W R.NETWORK	
	R784	QRE141J-181Y	180 1/4W R.NETWORK	
	R785	QRE141J-121Y	120 1/4W R.NETWORK	
	R786	QRE141J-121Y	120 1/4W R.NETWORK	
	R787	QRE141J-121Y	120 1/4W R.NETWORK	
	R788	QRE141J-121Y	120 1/4W R.NETWORK	
⚠	R800	QRZ9044-335	3.3M COMPOSITION	
⚠	R801	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R803	QRJ146J-821X	820 1/4W R.NETWORK	
⚠	R805	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R808	QRJ146J-3R3X	3.3 1/4W R.NETWORK	
⚠	R821	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R822	QRJ146J-182X	1.8K 1/4W R.NETWORK	
⚠	R831	QRL022J-100	10 2W R.NETWORK	
⚠	R832	QRJ146J-272X	2.7K 1/4W R.NETWORK	
⚠	R840	QRJ146J-220X	22 1/4W R.NETWORK	
⚠	R841	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R842	QRJ146J-472X	4.7K 1/4W R.NETWORK	
⚠	R843	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R845	QRJ146J-102X	1K 1/4W R.NETWORK	
⚠	R853	QRK126J-100X	10 1/2W R.NETWORK	
⚠	R854	QRK126J-562X	5.6K 1/2W R.NETWORK	
	R861	QRE141J-104Y	100K 1/4W R.NETWORK	
	R862	QRE141J-104Y	100K 1/4W R.NETWORK	
	R885	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R891	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R892	QRJ146J-272X	2.7K 1/4W R.NETWORK	
	R901	QRE141J-102Y	1K 1/4W R.NETWORK	
	R902	QRE141J-102Y	1K 1/4W R.NETWORK	
	R903	QRE141J-153Y	15K 1/4W R.NETWORK	
	R904	QRE141J-153Y	15K 1/4W R.NETWORK	
	R905	QRE141J-473Y	47K 1/4W R.NETWORK	
	R906	QRE141J-473Y	47K 1/4W R.NETWORK	
	R909	QRE141J-104Y	100K 1/4W R.NETWORK	
	R910	QRE141J-823Y	82K 1/4W R.NETWORK	
	R911	QRE141J-103Y	10K 1/4W R.NETWORK	
	R915	QRE141J-103Y	10K 1/4W R.NETWORK	
	R916	QRE141J-104Y	100K 1/4W R.NETWORK	
	R917	QRE141J-103Y	10K 1/4W R.NETWORK	
	R918	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R921	QRJ146J-220X	22 1/4W R.NETWORK	
⚠	R951	QRJ146J-220X	22 1/4W R.NETWORK	
⚠	R952	QRJ146J-220X	22 1/4W R.NETWORK	
⚠	R961	QRL022J-471	470 2W R.NETWORK	
⚠	R962	QRL022J-471	470 2W R.NETWORK	
	VR741	QVP0004-102Z	1K VARIABLE	
	VR742	QVP0004-102Z	1K VARIABLE	
		OTHERS		
		QWE881-16RR	VINYL WIRE	
		QWE886-16RR	PIN WIRE	
		QYSBSG3008E	T.SCREW	
	J961	QNS0023-001	JACK	
	L501	QQLZ005-R45	INDUCTOR	
	L581	QQLZ005-R45	INDUCTOR	
	L771	QQLZ005-R45	INDUCTOR	
	L772	QQLZ005-R45	INDUCTOR	
	S901	QSW0653-001	PUSH SWITCH	
⚠	T801	ETP1000-41JA	POWER TRASNFORMER	

■Electrical Parts List (MAIN P.C.B)

⚠	Item	Parts Number	Description	Area
	CN511	QGA2001C1-09	9P PLUG ASSY	
	CN711	QGB2510J1-10	CONNECTOR	
	CN713	QGB2510J1-05	CONNECTOR	
	CN811	QGF1205C1-13	CONNECTOR	
	CN831	QGD2501C1-03Z	SOCKET	
	CN851	QGB2510J1-06	CONNECTOR	
	EP110	QNZ0136-001Z	IM EARTH PLATE	
	EP500	QNZ0136-001Z	IM EARTH PLATE	
	EP800	E409182-001SM	EARTH TERMINAL	
	EP961	QNZ0136-001Z	IM EARTH PLATE	
	FC801	QNG0020-001Z	FUSE CLIP I.M	
	FC802	QNG0020-001Z	FUSE CLIP I.M	
	FC810	QNG0020-001Z	FUSE CLIP I.M	
	FC811	QNG0020-001Z	FUSE CLIP I.M	
	FC812	QNG0020-001Z	FUSE CLIP I.M	
	FC813	QNG0020-001Z	FUSE CLIP I.M	
	FW801	EWR3AD-13SS	FLAT WIRE	
	FW831	EWR33D-10LS	FLAT WIRE	
	FW901	EWR36D-40SS	CORD	
	FW902	EWR35B-16SST	FLAT WIRE	
	FW961	EWR33D-10SS	CORD	
	HS841	E70306-001	HEAT SINK	
	HS851	E70945-H40B	HEAT SINK	
	HS891	E70306-001	HEAT SINK	
⚠	LA101	E61380-030	FUSE LABEL	
⚠	RY801	QSK0055-001	RELAY	
	RY921	QSK0057-001	RELAY	
	RY951	QSK0057-001	RELAY	
	RY952	QSK0057-001	RELAY	
	ST901	QNB0007-001	SPK TERMINAL	
	ST951	QNB0013-001	SPK TERMINAL	
	TA801	QNZ0079-001Z	TAB I.M	
	TA802	QNZ0079-001Z	TAB I.M	
	TH540	QAD0012-202	THERMISTOR	
	TH568	QAD0012-202	THERMISTOR	
	TH749	QAD0012-202	THERMISTOR	
	TH750	QAD0012-202	THERMISTOR	
	TP001	QMV5005-004K	PLUG ASSY	

■Electrical Parts List (CONTROL P.C.B.)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC201	NJM2246D	I.C(MONO-ANALOG)	
	IC251	M5243AP12	I.C(M)	
	IC252	TC9163AN	I.C(DIGI-MOS)	
	IC301	NJM4580D-D	I.C.	
	IC311	NJM4580L	I.C(MONO-ANALOG)	
	IC312	NJM4580L	I.C(MONO-ANALOG)	
	IC313	NJM4580L	I.C(MONO-ANALOG)	
	IC321	TC9164AN	I.C(DIGI-MOS)	
	IC322	TC9162AN	I.C(DIGI-OTHER)	
	IC323	UPD4066BC	I.C(DIGI-MOS)	
	IC331	BA15218	I.C(MONO-ANALOG)	
	IC332	BA15218	I.C(MONO-ANALOG)	
	IC341	TC9412AP	I.C(M)	
	IC342	TC9413AP	I.C(M)	
	IC343	TC9413AP	I.C(M)	
	IC344	BA15218	I.C(MONO-ANALOG)	
		DIODES		
	D231	MTZJ6.2C-T2	ZENER	
	D232	MTZJ6.2C-T2	ZENER	
	D251	MTZJ6.8C-T2	ZENER	
	D252	MTZJ6.8C-T2	ZENER	
	D301	MTZJ8.2C-T2	ZENER	
	D302	MTZJ8.2C-T2	ZENER	
	D401	1SS133-T2	SI.DIODE	
	D402	1SS133-T2	SI.DIODE	
	D1503	1SS133-T2	SI.DIODE	
	D1511	1SS133-T2	SI.DIODE	
	D1512	1SS133-T2	SI.DIODE	
	D1531	1SS133-T2	SI.DIODE	
		TRANSISTORS		
	Q201	2SA933S/RS/-T	SILICON	
	Q202	2SC458/CD/-T	SILICON	
	Q203	DTC143ES-T	SILICON	
	Q204	2SA933S/RS/-T	SILICON	
	Q205	2SC458/CD/-T	SILICON	
	Q351	DTA144ES-T	SILICON	
	Q352	DTC144ES-T	SILICON	
	Q353	DTA144ES-T	SILICON	
	Q401	2SD2144S/VW/-T	SILICON	
	Q402	2SD2144S/VW/-T	SILICON	
	Q403	2SD2144S/VW/-T	SILICON	
	Q404	2SD2144S/VW/-T	SILICON	
	Q405	2SD2144S/VW/-T	SILICON	
	Q406	2SD2144S/VW/-T	SILICON	
	Q407	DTC144ES-T	SILICON	
	Q408	DTA144ES-T	SILICON	
	Q409	DTA144ES-T	SILICON	
	Q1501	2SC2240/L/-T	SILICON	
	Q1502	2SC2240/L/-T	SILICON	
	Q1503	2SA1038S/SE/-T	SILICON	
	Q1509	2SA1038S/SE/-T	SILICON	
	Q1511	2SC2389S/SE/-T	SILICON	
	Q1512	2SA1038S/SE/-T	SILICON	
	Q1540	2SD636/QR/	SILICON	
		CAPACITORS		
	C201	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C202	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C203	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C204	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C205	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C206	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C211	QETBOJM-108N	1000MF 6.3V E.CAP.	
	C212	QETB1HM-475E	4.7MF 50V E.CAP.	
	C213	QETB1HM-475E	4.7MF 50V E.CAP.	

⚠	Item	Parts Number	Description	Area
	C214	QETBOJM-108N	1000MF 6.3V E.CAP.	
	C215	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C216	QETB1CM-107	100MF 16V AL E.CAP.	
	C231	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C253	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C254	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C255	QETB1EM-476	47MF 25V AL E.CAP.	
	C256	QETB1EM-476	47MF 25V AL E.CAP.	
	C257	QETB1EM-476	47MF 25V AL E.CAP.	
	C258	QETB1EM-476	47MF 25V AL E.CAP.	
	C259	QCSB1HJ-100Y	10PF 50V CER.CAP.	
	C260	QCSB1HJ-100Y	10PF 50V CER.CAP.	
	C261	QCSB1HJ-100Y	10PF 50V CER.CAP.	
	C262	QCSB1HJ-100Y	10PF 50V CER.CAP.	
	C265	QETB1EM-226N	22MF 25V E.CAP.	
	C266	QETB1EM-226N	22MF 25V E.CAP.	
	C269	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C270	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C271	QFLB1HJ-272	2700PF 50V MYLAR CAP.	
	C272	QFLB1HJ-272	2700PF 50V MYLAR CAP.	
	C273	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C274	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C275	QFVJ1HJ-473Z	0.047MF 50V T.FILM	
	C276	QFVJ1HJ-473Z	0.047MF 50V T.FILM	
	C277	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C278	QFLB1HJ-822	8200PF 50V MYLAR CAP.	
	C279	QFVJ1HJ-684Z	0.68MF 50V T.FILM	
	C280	QFVJ1HJ-684Z	0.68MF 50V T.FILM	
	C281	QFVJ1HJ-104Z	0.1MF 50V T.FILM	
	C282	QFVJ1HJ-104Z	0.1MF 50V T.FILM	
	C283	QCSB1HJ-470	47PF 50V CER.CAP.	
	C284	QCSB1HJ-470	47PF 50V CER.CAP.	
	C287	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C300	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C301	QETB1HM-475E	4.7MF 50V E.CAP.	
	C302	QETB1HM-475E	4.7MF 50V E.CAP.	
	C303	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C304	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C305	QFLB1HJ-182	1800PF 50V MYLAR CAP.	
	C306	QFLB1HJ-182	1800PF 50V MYLAR CAP.	
	C307	QFLB1HJ-682	6800PF 50V MYLAR CAP.	
	C308	QFLB1HJ-682	6800PF 50V MYLAR CAP.	
	C309	QCS21HJ-101A	100PF 50V CER.CAP.	
	C310	QCS21HJ-101A	100PF 50V CER.CAP.	
	C311	QETB1HM-475E	4.7MF 50V E.CAP.	
	C312	QETB1HM-475E	4.7MF 50V E.CAP.	
	C313	QETC1AM-107ZN	100MF 10V E.CAP.	
	C314	QETC1AM-107ZN	100MF 10V E.CAP.	
	C315	QETB1CM-476	47MF 16V AL E.CAP.	
	C316	QETB1CM-476	47MF 16V AL E.CAP.	
	C321	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C322	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C323	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C325	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C326	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C327	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C328	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C329	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C330	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C331	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C332	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C333	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C334	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C335	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C336	QCBB1HK-331Y	330PF 50V CER.CAP.	

Electrical Parts List (CONTROL P.C.B.)

⚠	Item	Parts Number	Description	Area
	C337	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C338	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C339	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C340	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C341	QETB1HM-475E	4.7MF 50V E.CAP.	
	C342	QETB1HM-475E	4.7MF 50V E.CAP.	
	C343	QETB1HM-475E	4.7MF 50V E.CAP.	
	C344	QETB1HM-475E	4.7MF 50V E.CAP.	
	C345	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C346	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C347	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C348	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C351	QETB1HM-105	1MF 50V AL E.CAP.	
	C352	QETB1HM-105	1MF 50V AL E.CAP.	
	C353	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C354	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C355	QETB1HM-105	1MF 50V AL E.CAP.	
	C356	QETB1HM-105	1MF 50V AL E.CAP.	
	C357	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C358	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C359	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C360	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C361	QETB1HM-475E	4.7MF 50V E.CAP.	
	C362	QETB1EM-226N	22MF 25V E.CAP.	
	C363	QETB1EM-226N	22MF 25V E.CAP.	
	C365	QETB1HM-475E	4.7MF 50V E.CAP.	
	C366	QETB1HM-475E	4.7MF 50V E.CAP.	
	C401	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C402	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C403	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C404	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C405	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C406	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C407	QFVJ1HJ-274Z	0.27MF 50V T.FILM	
	C408	QFVJ1HJ-274Z	0.27MF 50V T.FILM	
	C409	QETB1HM-475E	4.7MF 50V E.CAP.	
	C410	QETB1HM-475E	4.7MF 50V E.CAP.	
	C411	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C412	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C413	QETB1HM-475E	4.7MF 50V E.CAP.	
	C414	QETB1HM-475E	4.7MF 50V E.CAP.	
	C415	QETB1HM-475E	4.7MF 50V E.CAP.	
	C416	QETB1HM-475E	4.7MF 50V E.CAP.	
	C417	QETB1HM-475E	4.7MF 50V E.CAP.	
	C419	QETB1HM-105	1MF 50V AL E.CAP.	
	C420	QETB1HM-475E	4.7MF 50V E.CAP.	
	C421	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C422	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C423	QETB1HM-475E	4.7MF 50V E.CAP.	
	C424	QETB1HM-475E	4.7MF 50V E.CAP.	
	C425	QETB1HM-475E	4.7MF 50V E.CAP.	
	C426	QETB1HM-475E	4.7MF 50V E.CAP.	
	C427	QETB1HM-475E	4.7MF 50V E.CAP.	
	C428	QETB1HM-475E	4.7MF 50V E.CAP.	
	C431	QETC1AM-107ZN	100MF 10V E.CAP.	
	C432	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C433	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C1500	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C1501	QEHB1HM-106	10MF 50V AL E.CAP.	
	C1502	QCS21HJ-271A	270PF 50V CER.CAP.	
	C1503	QCS21HJ-101A	100PF 50V CER.CAP.	
	C1504	QCB31HK-152Z	1500PF 50V CERAMIC	
	C1507	QCS21HJ-220A	22PF 50V CER.CAP.	
	C1508	QEHB1CM-476	47MF 16V AL E.CAP.	
	C1511	QEHC1HM-225	2.2MF 50V AL E.CAP.	

⚠	Item	Parts Number	Description	Area
	C1512	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C1513	QCS22HJ-330	33PF 500V CER.CAP.	
	C1514	QEHB1HM-476	47MF 50V AL E.CAP.	
	C1517	QEHC2AM-106Z	10MF 100V ELECTRO	
	C1521	QCS22HJ-470A	47PF 500V CER.CAP.	
	C1522	QCS22HJ-470A	47PF 500V CER.CAP.	
	C1543	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	
	C1544	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	
		RESISTORS		
	R201	QRE141J-471Y	470 1/4W R.NETWORK	
	R202	QRE141J-471Y	470 1/4W R.NETWORK	
	R203	QRE141J-471Y	470 1/4W R.NETWORK	
	R204	QRE141J-471Y	470 1/4W R.NETWORK	
	R205	QRE141J-471Y	470 1/4W R.NETWORK	
	R206	QRE141J-471Y	470 1/4W R.NETWORK	
	R211	QRE141J-750Y	75 1/4W R.NETWORK	
	R212	QRE141J-473Y	47K 1/4W R.NETWORK	
	R213	QRE141J-331Y	330 1/4W R.NETWORK	
	R214	QRE141J-750Y	75 1/4W R.NETWORK	
	R215	QRE141J-331Y	330 1/4W R.NETWORK	
	R216	QRE141J-750Y	75 1/4W R.NETWORK	
	R217	QRE141J-750Y	75 1/4W R.NETWORK	
	R218	QRE141J-473Y	47K 1/4W R.NETWORK	
	R221	QRE141J-151Y	150 1/4W R.NETWORK	
	R222	QRE141J-152Y	1.5K 1/4W R.NETWORK	
	R223	QRE141J-271Y	270 1/4W R.NETWORK	
	R225	QRE141J-151Y	150 1/4W R.NETWORK	
	R226	QRE141J-271Y	270 1/4W R.NETWORK	
	R227	QRE141J-152Y	1.5K 1/4W R.NETWORK	
	R228	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R229	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R231	QRE141J-471Y	470 1/4W R.NETWORK	
	R232	QRE141J-221Y	220 1/4W R.NETWORK	
	R233	QRE141J-221Y	220 1/4W R.NETWORK	
	R234	QRE141J-221Y	220 1/4W R.NETWORK	
	R235	QRE141J-221Y	220 1/4W R.NETWORK	
	R255	QRE141J-393Y	39K 1/4W R.NETWORK	
	R256	QRE141J-393Y	39K 1/4W R.NETWORK	
	R257	QRE141J-103Y	10K 1/4W R.NETWORK	
	R258	QRE141J-103Y	10K 1/4W R.NETWORK	
	R259	QRE141J-103Y	10K 1/4W R.NETWORK	
	R260	QRE141J-103Y	10K 1/4W R.NETWORK	
	R261	QRE141J-303Y	30K 1/4W R.NETWORK	
	R262	QRE141J-303Y	30K 1/4W R.NETWORK	
	R263	QRE141J-123Y	12K 1/4W R.NETWORK	
	R264	QRE141J-123Y	12K 1/4W R.NETWORK	
	R265	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R266	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R267	QRE141J-183Y	18K 1/4W R.NETWORK	
	R268	QRE141J-183Y	18K 1/4W R.NETWORK	
	R269	QRE141J-912Y	9.1K 1/4W R.NETWORK	
	R270	QRE141J-912Y	9.1K 1/4W R.NETWORK	
	R271	QRE141J-243Y	24K 1/4W R.NETWORK	
	R272	QRE141J-243Y	24K 1/4W R.NETWORK	
	R273	QRE141J-103Y	10K 1/4W R.NETWORK	
	R274	QRE141J-103Y	10K 1/4W R.NETWORK	
	R275	QRE141J-333Y	33K 1/4W R.NETWORK	
	R276	QRE141J-333Y	33K 1/4W R.NETWORK	
	R279	QRE141J-681Y	680 1/4W R.NETWORK	
	R280	QRE141J-681Y	680 1/4W R.NETWORK	
	R301	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R302	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R303	QRE141J-473Y	47K 1/4W R.NETWORK	
	R304	QRE141J-473Y	47K 1/4W R.NETWORK	
	R305	QRE141J-561Y	560 1/4W R.NETWORK	

Electrical Parts List (CONTROL P.C.B.)

⚠	Item	Parts Number	Description	Area
	R306	QRE141J-561Y	560 1/4W R.NETWORK	
	R307	QRE141J-393Y	39K 1/4W R.NETWORK	
	R308	QRE141J-393Y	39K 1/4W R.NETWORK	
	R309	QRE141J-474Y	470K 1/4W R.NETWORK	
	R310	QRE141J-474Y	470K 1/4W R.NETWORK	
	R311	QRE141J-104Y	100K 1/4W R.NETWORK	
	R312	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R313	QRJ146J-391X	390 1/4W R.NETWORK	
⚠	R314	QRJ146J-391X	390 1/4W R.NETWORK	
	R321	QRE141J-271Y	270 1/4W R.NETWORK	
	R322	QRE141J-271Y	270 1/4W R.NETWORK	
	R323	QRE141J-102Y	1K 1/4W R.NETWORK	
	R325	QRE141J-471Y	470 1/4W R.NETWORK	
	R326	QRE141J-471Y	470 1/4W R.NETWORK	
	R327	QRE141J-471Y	470 1/4W R.NETWORK	
	R328	QRE141J-471Y	470 1/4W R.NETWORK	
	R329	QRE141J-471Y	470 1/4W R.NETWORK	
	R330	QRE141J-471Y	470 1/4W R.NETWORK	
	R331	QRE141J-471Y	470 1/4W R.NETWORK	
	R332	QRE141J-471Y	470 1/4W R.NETWORK	
	R333	QRE141J-471Y	470 1/4W R.NETWORK	
	R334	QRE141J-471Y	470 1/4W R.NETWORK	
	R335	QRE141J-471Y	470 1/4W R.NETWORK	
	R336	QRE141J-471Y	470 1/4W R.NETWORK	
	R341	QRE141J-104Y	100K 1/4W R.NETWORK	
	R342	QRE141J-104Y	100K 1/4W R.NETWORK	
	R343	QRE141J-104Y	100K 1/4W R.NETWORK	
	R344	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R345	QRJ146J-271X	270 1/4W R.NETWORK	
⚠	R346	QRJ146J-271X	270 1/4W R.NETWORK	
	R347	QRE141J-153Y	15K 1/4W R.NETWORK	
	R348	QRE141J-153Y	15K 1/4W R.NETWORK	
	R349	QRE141J-153Y	15K 1/4W R.NETWORK	
	R350	QRE141J-153Y	15K 1/4W R.NETWORK	
	R351	QRE141J-303Y	30K 1/4W R.NETWORK	
	R352	QRE141J-303Y	30K 1/4W R.NETWORK	
	R353	QRE141J-103Y	10K 1/4W R.NETWORK	
	R354	QRE141J-103Y	10K 1/4W R.NETWORK	
	R355	QRE141J-104Y	100K 1/4W R.NETWORK	
	R356	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R361	QRJ146J-271X	270 1/4W R.NETWORK	
⚠	R362	QRJ146J-271X	270 1/4W R.NETWORK	
	R363	QRE141J-912Y	9.1K 1/4W R.NETWORK	
	R364	QRE141J-912Y	9.1K 1/4W R.NETWORK	
	R365	QRE141J-102Y	1K 1/4W R.NETWORK	
	R366	QRE141J-102Y	1K 1/4W R.NETWORK	
	R367	QRE141J-104Y	100K 1/4W R.NETWORK	
	R368	QRE141J-104Y	100K 1/4W R.NETWORK	
	R371	QRE141J-821Y	820 1/4W R.NETWORK	
	R372	QRE141J-821Y	820 1/4W R.NETWORK	
	R373	QRE141J-102Y	1K 1/4W R.NETWORK	
	R374	QRE141J-103Y	10K 1/4W R.NETWORK	
	R375	QRE141J-103Y	10K 1/4W R.NETWORK	
	R377	QRE141J-104Y	100K 1/4W R.NETWORK	
	R378	QRE141J-104Y	100K 1/4W R.NETWORK	
	R379	QRE141J-333Y	33K 1/4W R.NETWORK	
	R380	QRE141J-333Y	33K 1/4W R.NETWORK	
	R381	QRE141J-333Y	33K 1/4W R.NETWORK	
⚠	R401	QRZ9005-680X	68 FUSIBLE	
⚠	R402	QRZ9005-680X	68 FUSIBLE	
	R403	QRE141J-393Y	39K 1/4W R.NETWORK	
	R404	QRE141J-393Y	39K 1/4W R.NETWORK	
	R405	QRE141J-224Y	220K 1/4W R.NETWORK	
	R406	QRE141J-224Y	220K 1/4W R.NETWORK	
	R407	QRE141J-154Y	150K 1/4W R.NETWORK	

⚠	Item	Parts Number	Description	Area
	R408	QRE141J-154Y	150K 1/4W R.NETWORK	
	R409	QRE141J-103Y	10K 1/4W R.NETWORK	
	R410	QRE141J-103Y	10K 1/4W R.NETWORK	
	R413	QRE141J-104Y	100K 1/4W R.NETWORK	
	R414	QRE141J-104Y	100K 1/4W R.NETWORK	
	R415	QRE141J-104Y	100K 1/4W R.NETWORK	
	R416	QRE141J-104Y	100K 1/4W R.NETWORK	
⚠	R417	QRZ9005-680X	68 FUSIBLE	
⚠	R418	QRZ9005-680X	68 FUSIBLE	
	R421	QRE141J-123Y	12K 1/4W R.NETWORK	
	R422	QRE141J-102Y	1K 1/4W R.NETWORK	
	R423	QRE141J-154Y	150K 1/4W R.NETWORK	
	R424	QRE141J-154Y	150K 1/4W R.NETWORK	
	R425	QRE141J-102Y	1K 1/4W R.NETWORK	
	R426	QRE141J-103Y	10K 1/4W R.NETWORK	
	R429	QRE141J-104Y	100K 1/4W R.NETWORK	
	R430	QRE141J-104Y	100K 1/4W R.NETWORK	
	R431	QRE141J-104Y	100K 1/4W R.NETWORK	
	R432	QRE141J-104Y	100K 1/4W R.NETWORK	
	R433	QRE141J-103Y	10K 1/4W R.NETWORK	
	R434	QRE141J-103Y	10K 1/4W R.NETWORK	
	R435	QRE141J-102Y	1K 1/4W R.NETWORK	
	R436	QRE141J-102Y	1K 1/4W R.NETWORK	
	R437	QRE141J-102Y	1K 1/4W R.NETWORK	
	R438	QRE141J-102Y	1K 1/4W R.NETWORK	
	R439	QRE141J-102Y	1K 1/4W R.NETWORK	
	R440	QRE141J-102Y	1K 1/4W R.NETWORK	
	R441	QRE141J-102Y	1K 1/4W R.NETWORK	
	R442	QRE141J-103Y	10K 1/4W R.NETWORK	
⚠	R443	QRZ9005-680X	68 FUSIBLE	
⚠	R444	QRZ9005-680X	68 FUSIBLE	
	R445	QRE141J-154Y	150K 1/4W R.NETWORK	
	R446	QRE141J-154Y	150K 1/4W R.NETWORK	
	R447	QRE141J-154Y	150K 1/4W R.NETWORK	
	R448	QRE141J-102Y	1K 1/4W R.NETWORK	
	R1501	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R1502	QRE141J-563Y	56K 1/4W R.NETWORK	
	R1503	QRE141J-302Y	3K 1/4W R.NETWORK	
	R1504	QRE141J-183Y	18K 1/4W R.NETWORK	
	R1505	QRE141J-183Y	18K 1/4W R.NETWORK	
	R1507	QRE141J-563Y	56K 1/4W R.NETWORK	
	R1508	QRE141J-391Y	390 1/4W R.NETWORK	
⚠	R1511	QRJ146J-331X	330 1/4W R.NETWORK	
	R1512	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R1513	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R1514	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R1515	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R1517	QRJ146J-100X	10 1/4W R.NETWORK	
	R1518	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R1523	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R1524	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R1527	QRZ0197-R22	0.22 1W NETWORK RES.	
⚠	R1528	QRJ129J-330	33 1/2W R.NETWORK	
	R1531	QRE141J-102Y	1K 1/4W R.NETWORK	
	R1532	QRE141J-183Y	18K 1/4W R.NETWORK	
	R1533	QRE141J-123Y	12K 1/4W R.NETWORK	
	R1541	QRE141J-471Y	470 1/4W R.NETWORK	
	R1542	QRE141J-361Y	360 1/4W R.NETWORK	
	R1543	QRE141J-181Y	180 1/4W R.NETWORK	
	R1544	QRE141J-181Y	180 1/4W R.NETWORK	
	R1545	QRE141J-181Y	180 1/4W R.NETWORK	
	R1546	QRE141J-181Y	180 1/4W R.NETWORK	
⚠	R1547	QRL022J-100	10 2W R.NETWORK	
	R1549	QRE141J-301Y	300 1/4W R.NETWORK	
		OTHERS		

■Electrical Parts List (CONTROL P.C.B.)

⚠	Item	Parts Number	Description	Area
		E3400-431	FELT SPACER	
		VWE370-04A1A1	UL WIRE	
		VWE370-094K4K	VINYL WIRE	
	J301	QNN0163-001	PIN JACK	
	J302	QNN0163-001	PIN JACK	
	J303	QNN0027-001	PIN JACK	
	J304	QNN0060-001	PIN JACK	
	J311	QNN0180-001	PIN JACK	
	J312	QNN0059-001	PIN JACK	
	J313	QNN0067-001	PIN JACK	
	J314	QNN0067-001	PIN JACK	
	J315	QNN0059-001	PIN JACK	
	J321	QNS0009-001	3.5 JACK	
	J322	QNS0001-001	JACK	
	J323	QNS0001-001	JACK	
	J324	QNS0001-001	JACK	
	L201	QQL121M-R22Y	INDUCTOR I.M	
	CN101	QGB2510J1-12	CONNECTOR	
	CN301	QGB2510K1-12	CONNECTOR	
	CN304	QGF1205C1-27	CONNECTOR	
	CN311	QGB2510J1-12	CONNECTOR	
	CN501	EWS269-A413J	SOCKET WIRE ASSY	
	CN502	EWS293-0130	SOCKET WIRE	
	CN512	QGA2001C1-03	3P PLUG ASSY	
	CN603	QGB2510K1-12	CONNECTOR	
	CN604	QGB2510K1-10	CONNECTOR	
	CN605	QGB2510K1-06	CONNECTOR	
	CN606	QGB2510K1-04	CONNECTOR	
	CN607	QGB2510K1-04	CONNECTOR	
	CN608	QGA2001C1-03	3P PLUG ASSY	
	CN611	QGB2510J1-08	CONNECTOR	
	CN612	QGB2510J1-09	CONNECTOR	
	CN613	QGB2510J1-12	CONNECTOR	
	CN614	QGB2510J1-10	CONNECTOR	
	CN615	QGB2510J1-06	CONNECTOR	
	CN616	QGB2510J1-04	CONNECTOR	
	CN617	QGB2510J1-04	CONNECTOR	
	CN618	EWS293-0135	SOCKET WIRE	
	CN641	EWS293-0145	SOCKET WIRE	
	CN651	QGA2001C1-03	3P PLUG ASSY	
	CN702	EWS296-0130J	CONNECTOR WIRE ASSY	
	CN841	QGB2510K1-06	CONNECTOR	
	EP301	E409182-001SM	EARTH TERMINAL	
	L1501	QQLZ005-R45	INDUCTOR	
	TH541	QAD0012-202	THERMISTOR	

■Electrical Parts List (FRONT P.C.B.)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC401	MN173222JABN1	I.C(M)	
	IC402	GP1U271X	INFRARED DETECT UNIT	
	IC403	IC-PST600/E/-T	I.C.	
	IC404	BU2092	I.C(M)	
	IC601	TC9471F	I.C(M)	
		DIODES		
	D401	1SR139-200-T4	SILICON	
	D402	1SS133-T2	SI.DIODE	
	D403	1SS133-T2	SI.DIODE	
	D404	1SS133-T2	SI.DIODE	
	D405	1SS133-T2	SI.DIODE	
	D406	1SS133-T2	SI.DIODE	
	D407	1SS133-T2	SI.DIODE	
	D408	1SS133-T2	SI.DIODE	
	D409	1SS133-T2	SI.DIODE	
	D410	1SS133-T2	SI.DIODE	
	D411	SLR-342VC-T	L.E.D.	
	D418	SLR-342MC-T	L.E.D.	
	D419	SLR-342MC-T	L.E.D.	
	D420	SLR-342MC-T	L.E.D.	
	D421	SLR-342MC-T	L.E.D.	
	D422	SLR-342MC-T	L.E.D.	
	D423	SLR-342MC-T	L.E.D.	
	D424	SLR-342MC-T	L.E.D.	
	D431	1SS133-T2	SI.DIODE	
	D432	1SS133-T2	SI.DIODE	
	D433	1SS133-T2	SI.DIODE	
	D434	1SS133-T2	SI.DIODE	
	D553	1SS133-T2	SI.DIODE	
	D703	1SS133-T2	SI.DIODE	
	D704	1SS133-T2	SI.DIODE	
	D711	SLR-342MC-T	L.E.D.	
	D712	SLR-342MC-T	L.E.D.	
		TRANSISTORS		
	Q401	DTC114YS-T	SILICON	
	Q402	DTC114TSTP	DIGITAL TRANSISTOR	
	Q403	DTC144WS-T	SILICON	
	Q404	DTC114YS-T	SILICON	
	Q405	DTC144ES-T	SILICON	
	Q406	DTC114YS-T	SILICON	
	Q410	DTC114YS-T	SILICON	
	Q411	DTC114YS-T	SILICON	
	Q412	DTC114YS-T	SILICON	
	Q413	DTC114YS-T	SILICON	
	Q414	DTC114YS-T	SILICON	
	Q551	2SC2240/L/-T	SILICON	
	Q552	2SC2240/L/-T	SILICON	
	Q561	2SA1038S/SE/-T	SILICON	
	Q701	2SC2240/L/-T	SILICON	
	Q702	2SC2240/L/-T	SILICON	
	Q703	2SC2240/L/-T	SILICON	
	Q704	2SC2240/L/-T	SILICON	
	Q707	2SA1038S/SE/-T	SILICON	
	Q708	2SA1038S/SE/-T	SILICON	
	Q711	2SC2389S/SE/-T	SILICON	
	Q712	2SC2389S/SE/-T	SILICON	
		CAPACITORS		
	C401	QETB1AM-227	220MF 10V E.CAP.	
	C402	QCZ0202-155	1.5MF 25V CER.RES.	
	C403	QEZ0329-10AZ	ELECTRO	
	C404	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C405	QDVB1EZ-223Y	0.022MF 25V C CAP I M	
	C406	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C411	QETB1HM-475E	4.7MF 50V E.CAP.	
	C412	QETB1HM-475E	4.7MF 50V E.CAP.	
	C413	QETC1AM-107ZN	100MF 10V E.CAP.	
	C414	QETB1HM-475E	4.7MF 50V E.CAP.	

⚠	Item	Parts Number	Description	Area
	C551	QETB1HM-106	10MF 50V E.CAP.	
	C552	QCS21HJ-271A	270PF 50V CER.CAP.	
	C553	QCS21HJ-101A	100PF 50V CER.CAP.	
	C556	QCB31HK-152Z	1500PF 50V CERAMIC	
	C557	QCS21HJ-220A	22PF 50V CER.CAP.	
	C558	QETB1CM-476	47MF 16V AL E.CAP.	
	C561	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C562	QCS22HJ-330	33PF 500V CER.CAP.	
	C563	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C564	QETB1HM-476	47MF 50V E.CAP.	
	C601	QETB1HM-475E	4.7MF 50V E.CAP.	
	C602	QETB1HM-475E	4.7MF 50V E.CAP.	
	C603	QDXB1CM-222Y	2200PF 16V C CAP.	
	C604	QDXB1CM-222Y	2200PF 16V C CAP.	
	C605	QETB1HM-475E	4.7MF 50V E.CAP.	
	C606	QETB1HM-475E	4.7MF 50V E.CAP.	
	C607	QDXB1CM-222Y	2200PF 16V C CAP.	
	C608	QDXB1CM-222Y	2200PF 16V C CAP.	
	C609	QETB1HM-475E	4.7MF 50V E.CAP.	
	C610	QETB1HM-475E	4.7MF 50V E.CAP.	
	C611	QDXB1CM-222Y	2200PF 16V C CAP.	
	C612	QDXB1CM-222Y	2200PF 16V C CAP.	
	C613	QETC1AM-476ZM	47MF 10V E.CAP.	
	C614	QETC1AM-476ZM	47MF 10V E.CAP.	
	C615	QETC1AM-476ZM	47MF 10V E.CAP.	
	C616	QETC1AM-476ZM	47MF 10V E.CAP.	
	C617	QETC1AM-476ZM	47MF 10V E.CAP.	
	C618	QETC1AM-476ZM	47MF 10V E.CAP.	
	C619	QETC1AM-476ZM	47MF 10V E.CAP.	
	C620	QETC1AM-476ZM	47MF 10V E.CAP.	
	C621	QETC1AM-476ZM	47MF 10V E.CAP.	
	C622	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C623	QETC1AM-476ZM	47MF 10V E.CAP.	
	C624	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C628	QETC1AM-476ZM	47MF 10V E.CAP.	
	C630	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C631	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C632	QETC1AM-476ZM	47MF 10V E.CAP.	
	C633	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C634	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C635	QCGB1HK-102	1000PF 50V CER.CAP.	
	C636	QCSB1HJ-100Y	10PF 50V CER.CAP.	
	C637	QCSB1HJ-470	47PF 50V CER.CAP.	
	C701	QETB1HM-106	10MF 50V E.CAP.	
	C702	QETB1HM-106	10MF 50V E.CAP.	
	C703	QCS21HJ-271A	270PF 50V CER.CAP.	
	C704	QCS21HJ-271A	270PF 50V CER.CAP.	
	C705	QCS21HJ-101A	100PF 50V CER.CAP.	
	C706	QCS21HJ-101A	100PF 50V CER.CAP.	
	C711	QETB1CM-107	100MF 16V AL E.CAP.	
	C712	QETB1CM-107	100MF 16V AL E.CAP.	
	C713	QCS21HJ-220A	22PF 50V CER.CAP.	
	C714	QCS21HJ-220A	22PF 50V CER.CAP.	
	C717	QCB31HK-152Z	1500PF 50V CERAMIC	
	C718	QCB31HK-152Z	1500PF 50V CERAMIC	
	C721	QCS22HJ-220	22PF 500V CER.CAP.	
	C722	QCS22HJ-220	22PF 500V CER.CAP.	
	C723	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C724	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C727	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C728	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C739	QETB1JM-107	100MF 63V AL E.CAP.	
		RESISTORS		
	R401	QRE141J-103Y	10K 1/4W R.NETWORK	
	R402	QRE141J-331Y	330 1/4W R.NETWORK	
	R403	QRE141J-223Y	22K 1/4W R.NETWORK	
	R404	QRE141J-103Y	10K 1/4W R.NETWORK	
	R405	QRE141J-472Y	4.7K 1/4W R.NETWORK	

Electrical Parts List (FRONT P.C.B.)

⚠	Item	Parts Number	Description	Area
	R406	QRE141J-103Y	10K 1/4W R.NETWORK	
	R407	QRE141J-103Y	10K 1/4W R.NETWORK	
	R408	QRE141J-103Y	10K 1/4W R.NETWORK	
	R409	QRE141J-471Y	470 1/4W R.NETWORK	
	R410	QRE141J-103Y	10K 1/4W R.NETWORK	
	R411	QRE141J-221Y	220 1/4W R.NETWORK	
	R412	QRE141J-103Y	10K 1/4W R.NETWORK	
	R413	QRE141J-103Y	10K 1/4W R.NETWORK	
	R414	QRE141J-103Y	10K 1/4W R.NETWORK	
	R415	QRE141J-103Y	10K 1/4W R.NETWORK	
	R417	QRE141J-221Y	220 1/4W R.NETWORK	
	R418	QRE141J-221Y	220 1/4W R.NETWORK	
	R419	QRE141J-472Y	4.7K 1/4W R.NETWORK	
	R420	QRE141J-104Y	100K 1/4W R.NETWORK	
	R421	QRE141J-104Y	100K 1/4W R.NETWORK	
	R422	QRE141J-104Y	100K 1/4W R.NETWORK	
	R423	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R424	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R425	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R426	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R436	QRE141J-221Y	220 1/4W R.NETWORK	
	R437	QRE141J-221Y	220 1/4W R.NETWORK	
	R438	QRE141J-221Y	220 1/4W R.NETWORK	
	R439	QRE141J-221Y	220 1/4W R.NETWORK	
	R440	QRE141J-221Y	220 1/4W R.NETWORK	
	R441	QRE141J-221Y	220 1/4W R.NETWORK	
	R442	QRE141J-221Y	220 1/4W R.NETWORK	
	R443	QRE141J-221Y	220 1/4W R.NETWORK	
	R444	QRE141J-221Y	220 1/4W R.NETWORK	
	R445	QRE141J-221Y	220 1/4W R.NETWORK	
	R446	QRE141J-221Y	220 1/4W R.NETWORK	
	R447	QRE141J-221Y	220 1/4W R.NETWORK	
	R448	QRE141J-221Y	220 1/4W R.NETWORK	
	R449	QRE141J-221Y	220 1/4W R.NETWORK	
	R450	QRE141J-221Y	220 1/4W R.NETWORK	
	R451	QRE141J-221Y	220 1/4W R.NETWORK	
	R452	QRE141J-221Y	220 1/4W R.NETWORK	
	R453	QRE141J-221Y	220 1/4W R.NETWORK	
	R454	QRE141J-221Y	220 1/4W R.NETWORK	
	R455	QRE141J-221Y	220 1/4W R.NETWORK	
	R456	QRE141J-221Y	220 1/4W R.NETWORK	
	R457	QRE141J-221Y	220 1/4W R.NETWORK	
	R458	QRE141J-221Y	220 1/4W R.NETWORK	
	R459	QRE141J-221Y	220 1/4W R.NETWORK	
	R551	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R552	QRE141J-563Y	56K 1/4W R.NETWORK	
	R553	QRE141J-302Y	3K 1/4W R.NETWORK	
	R555	QRE141J-183Y	18K 1/4W R.NETWORK	
	R556	QRE141J-101Y	100 1/4W R.NETWORK	
	R558	QRE141J-391Y	390 1/4W R.NETWORK	
	R560	QRE141J-563Y	56K 1/4W R.NETWORK	
	R561	QRJ146J-331X	330 1/4W R.NETWORK	
	R563	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R564	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R565	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R566	QRE141J-332Y	3.3K 1/4W R.NETWORK	
⚠	R569	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R570	QRJ146J-100X	10 1/4W R.NETWORK	
	R601	QRE141J-271Y	270 1/4W R.NETWORK	
	R602	QRE141J-271Y	270 1/4W R.NETWORK	
	R603	QRE141J-271Y	270 1/4W R.NETWORK	
	R604	QRE141J-271Y	270 1/4W R.NETWORK	
	R605	QRE141J-271Y	270 1/4W R.NETWORK	
	R606	QRE141J-271Y	270 1/4W R.NETWORK	
	R607	QRE141J-225Y	2.2M 1/4W R.NETWORK	
	R608	QRE141J-104Y	100K 1/4W R.NETWORK	
	R609	QRE141J-104Y	100K 1/4W R.NETWORK	
	R610	QRE141J-104Y	100K 1/4W R.NETWORK	

⚠	Item	Parts Number	Description	Area
	R611	QRE141J-104Y	100K 1/4W R.NETWORK	
	R612	QRE141J-103Y	10K 1/4W R.NETWORK	
	R613	QRE141J-103Y	10K 1/4W R.NETWORK	
	R614	QRE141J-103Y	10K 1/4W R.NETWORK	
	R701	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R702	QRE141J-222Y	2.2K 1/4W R.NETWORK	
	R703	QRE141J-563Y	56K 1/4W R.NETWORK	
	R704	QRE141J-563Y	56K 1/4W R.NETWORK	
	R705	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R706	QRE141J-332Y	3.3K 1/4W R.NETWORK	
	R709	QRE141J-183Y	18K 1/4W R.NETWORK	
	R710	QRE141J-183Y	18K 1/4W R.NETWORK	
	R711	QRE141J-391Y	390 1/4W R.NETWORK	
	R712	QRE141J-391Y	390 1/4W R.NETWORK	
	R713	QRE141J-563Y	56K 1/4W R.NETWORK	
	R714	QRE141J-563Y	56K 1/4W R.NETWORK	
	R717	QRE141J-101Y	100 1/4W R.NETWORK	
	R718	QRE141J-101Y	100 1/4W R.NETWORK	
⚠	R721	QRJ146J-331X	330 1/4W R.NETWORK	
⚠	R722	QRJ146J-331X	330 1/4W R.NETWORK	
	R727	QRE141J-473Y	47K 1/4W R.NETWORK	
	R728	QRE141J-473Y	47K 1/4W R.NETWORK	
⚠	R729	QRJ146J-331X	330 1/4W R.NETWORK	
⚠	R730	QRJ146J-331X	330 1/4W R.NETWORK	
⚠	R739	QRJ146J-100X	10 1/4W R.NETWORK	
⚠	R740	QRJ146J-100X	10 1/4W R.NETWORK	
	RA401	QRB049J-103	10K 1/10WRES.	
	RA402	QRB109J-103	10K 1/10WNETWORK RES.	
		OTHERS		
		E3400-431	FELT SPACER	
		VWE350-144K4K	UL WIRE	
		VWE370-04A1A1		
		VWE370-08A1A1	UL WIRE	
	L601	QQL121M-2R2Y	INDUCTOR I.M	
	S401	QSW0683-001Z	PUSH SWITCH	
	S402	QSW0683-001Z	PUSH SWITCH	
	S403	QSW0683-001Z	PUSH SWITCH	
	S404	QSW0683-001Z	PUSH SWITCH	
	S405	QSW0683-001Z	PUSH SWITCH	
	S406	QSW0683-001Z	PUSH SWITCH	
	S407	QSW0683-001Z	PUSH SWITCH	
	S408	QSW0683-001Z	PUSH SWITCH	
	S409	QSW0683-001Z	PUSH SWITCH	
	S410	QSW0683-001Z	PUSH SWITCH	
	S411	QSW0683-001Z	PUSH SWITCH	
	S412	QSW0683-001Z	PUSH SWITCH	
	S413	QSW0683-001Z	PUSH SWITCH	
	S419	QSW0683-001Z	PUSH SWITCH	
	X401	QAX0112-001Z	RESONATOR I.M	
	X601	QAX0257-001Z	RESONATOR I.M	
	CN314	QGF1205C1-27	CONNECTOR	
	CN421	EWS26D-A408J	SOCKET WIRE ASSY	
	CN431	QGA2001C1-13	13P PLUG ASSY	
	CN601	QGB2510K1-08	CONNECTOR	
	CN602	QGB2510K1-09	CONNECTOR	
	CN701	QGB2510K1-10	CONNECTOR	
	CN703	QGB2510K1-05	CONNECTOR	
	CN712	QGA2001F1-06	6P PLUG ASSY	
	CN811	QGF1205C1-13	CONNECTOR	
	DI401	QLF0002-001	FLUORESCENT DISPLAY TUBE	
	FH001	E309106-001SM	FL HOLDER	
	FS001	E3400-444	FELT SPACER	
	FS002	E3400-444	FELT SPACER	
	HL401	VYH7653-001	I.C.PROTECTOR	
	HL601	VYH7237-002	I.C.COVER	
	JS401	QSW0502-001	SW	

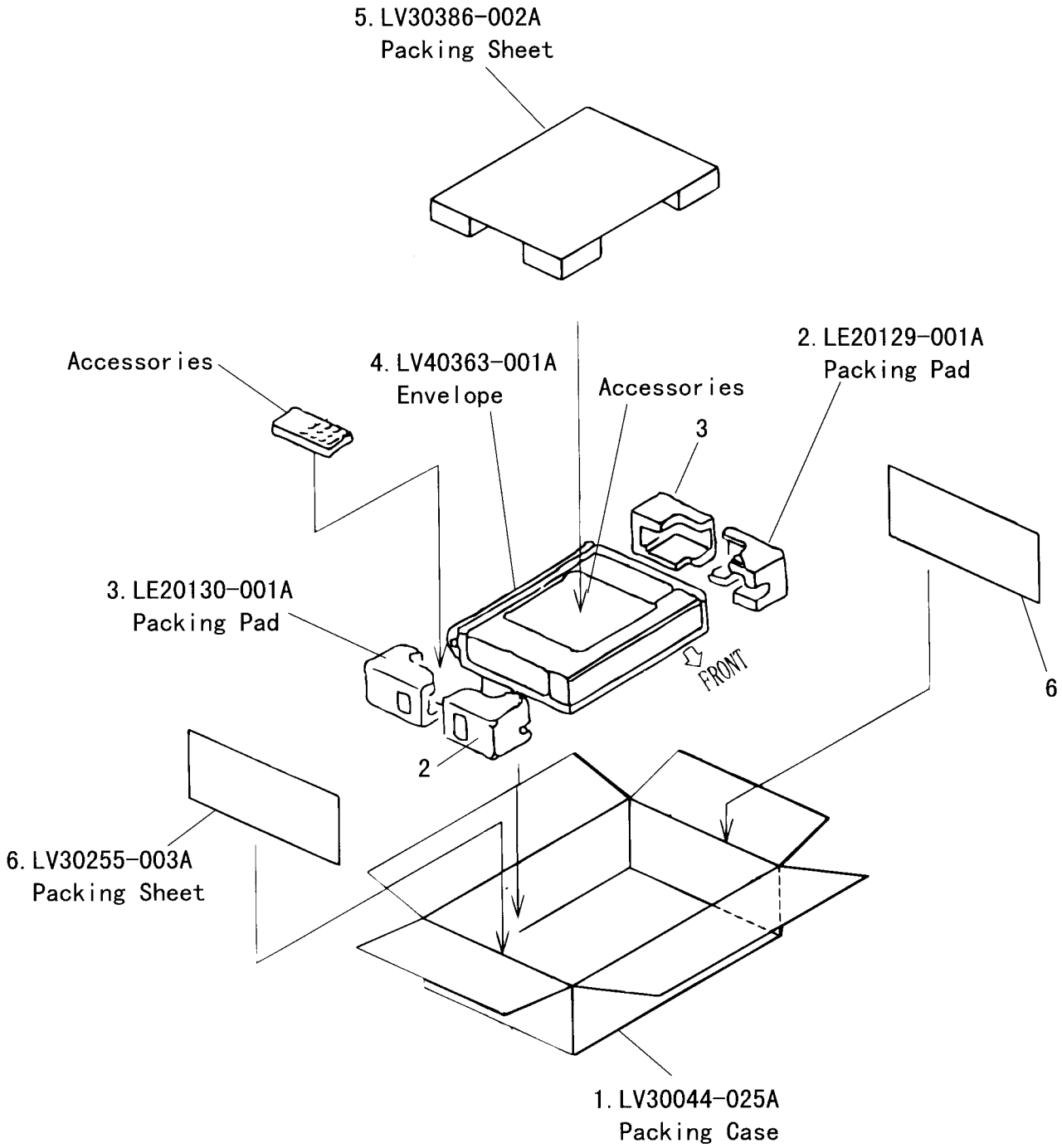
■Parts List

Block No. M2MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LET0119-001B	INSTRUCTION BOOK	1		J
		LET0119-002A	INSTRUCTION BOOK	1		C
	2	BT-20071B	SERVICE NETWORK	1		C
	3	BT-52002-1	WARRANTY CARD	1		C
	4	BT-51006-1	REGISTER CARD	1		J
	5	BT-20044G	SAFETY SHEET	1		J
	6	EWP201-011	ANTENNA WIRE	1		
	7	QAL0014-001	AM LOOP ANT	1		
	8	RM-SR664UKP	REMOCON	1		
	9	R6SPTT-2STS	BATTERY	1		
	10	QPA02503505P	POLY BAG	1		

Packing Materials and Parts Numbers

Block No. M 3 MM



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